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Volume Two

MILITARY STRENGTH AND RESOURCES OF THE UNITED STATES

LIEUT. COL. DWIGHT E. AULTMAN
FIELD ARTILLERY, UNITED STATES ARMY

The Collier Classics

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Introduction

THE United States has long prided itself upon its immunity from attack due to the ocean barrier and the vast latent resources of the country. The attention of our people has been turned toward industrial development and with each great stride made our pride has increased.

The great European War was felt by many to be a thing apart—a catastrophe to be regretted, but one which could not, and should not, affect our daily lives. There were others who believed from the beginning that sooner or later we should become, if not involved, at least so deeply affected as to necessitate a change in our methods of thought and our conduct of both national and business affairs. The number of those who hold this latter opinion has increased with each month of the great struggle.

In this volume the resources of our nation are contrasted with our military strength. Effort has been made to show how strong we might be and how weak we actually are. The careful reader cannot fail to draw the conclusion that a greater portion of our wealth must be diverted toward national insurance if we are to be safe to con-

tinue our government and to pursue our national ideals.

It has been believed generally that the appropriations for the army and navy of the United States are greater than those of any other nation. It is true that the expenditures per man have been excessive in comparison, but the sum total cannot have been more than a small percentage of the expenditures of those military nations truly prepared for war. The reason for this erroneous impression undoubtedly may be found in the fact that the United States publishes every appropriation made, while European nations (at least some of them) maintain this in strictest confidence. Our Congressional Records show not only what each item of appropriation is needed for, but the actual amount of that class of munition on hand. These are matters which, if divulged in many European countries, would subject the betrayer to trial for treason.

A consideration of the size of armies maintained should show the fallacy of the American's idea of his generosity in matters of defense. Though the pay to be given the soldier under the volunteer system is a large item, when compared to the small pay of the European soldier, the equipment, clothing, food of the individual soldier, artillery, ammunition, animals and wagons, motor transportation and the overhead charges of administration are substantially the same for

the same number of men either in this country or abroad. The most moderate estimate of the expenditure of ammunition by the Germans during the first months of the war shows that it must have cost to secure these reserves a sum greater than we have expended on our field artillery, both guns and ammunition, since the Civil War.

It has been said of Germany that she can endure these gigantic expenditures for national purposes because throughout the country there is neither inefficiency nor waste. Those needed for a special duty are provided, and to each official is allotted his task and no more. In the United States indifference to military preparedness has so far prevented a sufficient number of army officers being detailed for General Staff duties to make more than a bare outline of what our military policy should be.

In this volume there has been laid down what should be done.

Military Strength and Resources of the United States

I

Geographical Situation

A GREAT deal of our strength, as regards immunity from invasion by a foreign power, lay formerly in the "splendid isolation" of the United States. To some extent this splendid isolation is still an element of strength, as no other nation besides Great Britain can assail the United States within her continental limits without resorting to an overseas expedition, with all the dangers of raids on its fleets of transports.

Even Great Britain would be under the necessity of transporting great numbers of troops by sea, as she would never normally have sufficient forces in Canada to make a serious attempt against our territory.

The geographical location of our country must therefore be considered as one of the elements of our national strength, though the elements of weakness thereof, under modern conditions, must be clearly pointed out in its relation to our strategic defense.

It must be assumed that the readers of this volume are familiar with the actual geographical location of the United States on the world's map, and that therefore to state that we occupy the southern half of the North American continent, lying between 67° and 125° longitude west of Greenwich, and between 25° and 49° north latitude, bounded on the north by the Dominion of Canada, on the east by the Atlantic Ocean, on the south by the Gulf of Mexico and Mexico, and on the west by the Pacific Ocean, would be to describe the obvious.

Not so obvious, however, would be some of the details of that location—details which are of extreme importance in the matter of defense. Such are the length of those boundaries, the location of our resources, the avenues through which they can be reached, and the distance, in miles and time, from the ports of the principal foreign nations.

Our northern or Canadian boundary, extending from Maine to the Great Lakes, thence along the latter to nearly the west end of Lake Superior, and from that point to the west along the forty-ninth parallel of latitude, is approximately 3,500 miles in length.

In a large part of its extent there are natural obstacles, such as the woods of northern Maine, the Great Lakes, and the Rocky Mountain region, and in these places our border is a strong natural

boundary, difficult of passage in the face of even weak opposition. The main avenues of entrance into the United States from Canada that would be available in time of war are Burgoyne's old route from Montreal via Lake Champlain toward Albany; the route south from Winnipeg toward St. Paul and Minneapolis; and that down the Pacific coast from British Columbia leading into the States of Washington and Oregon.

These avenues would naturally be available only in a war in which the British Empire should be an enemy.

Our Atlantic coast extends for some 1,800 miles from Maine to Florida, and contains all the great ports of the eastern section of the country. Any one of the more important of these ports in the hands of an enemy would furnish a base for operations in our territory, and it may be noted in passing that, though these ports are all adequately defended by seacoast forts and guns, it is still possible to land forces in their vicinity and reduce them by an attack from the rear. Only a mobile force in conjunction with the seacoast defenses can be depended upon to prevent such landings.

To show the proximity of our Atlantic seaboard from some of the principal ports of the great nations of Europe it is necessary to give not only the distances but also the time consumed in traversing the ocean. It would also be perti-

nent to contrast the duration of the passage under former conditions with that of the fast ships of to-day, and to show how our "splendid isolation" is rapidly disappearing with the development of steam navigation.

Taking New York, our principal seaport, as the strategic center of the Atlantic coast, the distance to Liverpool, England, is 3,540 miles; to Brest, France, the seat of one of the principal French naval arsenals, 3,370 miles; and to Bremen, Germany, 4,260 miles.

In the days of sailing ships, the period in which the conception was born that we were too far from Europe to be seriously embroiled with any of the nations of that continent, the usual time of passage was in the neighborhood of sixty days; on the advent of steam navigation this was at first reduced to about two weeks. With the great progress in the development of steamships, this time has been so reduced that in the present day the time by fast steamers from Liverpool is five days and a few hours, from Brest about the same, and from Bremen about seven days. While these are record times for the swiftest ships, they may be taken as an index of our proximity to Europe in the modern age of steam.

The time required for the transportation of a military expedition would be materially longer, and it has been estimated that, including the necessary time for loading the transports, Great

Britain could send an expedition composed of 170,000 men to our shores in about fourteen days; France could send 160,000 in sixteen days; and Germany could send the almost overwhelming number of 387,000 in about the same length of time.

Mr. Hudson Maxim, in his work, "Defenseless America," points out the fact that within a circle of 170 miles radius, with its center at Peekskill, New York, are included many of our most important cities, most of our manufactories of war material, and the principal coal fields of Pennsylvania, so that the proximity of these important places and resources to the ports of the principal nations of Europe is a matter of serious concern.

To judge from the recent mobilization of the National Guard for service on the Mexican border, it is undoubtedly true that such an expedition as has been described above could be dispatched from England, France, or Germany, and could land on our shores before the mobilization of our defense could be completed.

To pass from the Atlantic to the Gulf coast, we find conditions there unfavorable for invasion, as the distances through which a hostile force would have to pass before it could attain a strategic success would be too great, and the time consumed in such an advance would be sufficient to permit us to prepare, at least partly, for defense.

The same conditions obtain as to our Mexican border, which extends for 1,200 miles from the mouth of the Rio Grande to the Pacific, principally over sandy wastes, traversable only with the greatest difficulty if the railroads that now cross them were destroyed, which would be the case were they seriously menaced.

The Pacific coast is at a greater distance both in miles and time from our nearest powerful neighbor on that side, Japan, than is the case with the Atlantic coast and the powers of Europe. Some 5,000 miles of sea must be traversed from Japanese ports to San Francisco or Seattle, requiring a voyage which, under the best of conditions at the present time, consumes about fifteen days. The estimate of time in which the Japanese could load and send an expedition of about 95,000 men to our Pacific coast, the transport fleet conveying which would move at the slow rate of about ten knots an hour, due to the smaller and inferior shipping of Japan, is about twenty-two and a half days.

Our Dependencies

Porto Rico: This island, one of two important island possessions which we hold in the Atlantic, is the smallest of the Greater Antilles. It lies at about 66° west longitude, and 18° north latitude, to the eastward of the island of Haiti. It is 1,560 miles from New York, about 1,200 miles from

Hampton Roads, Virginia, and is strategically situated at the eastern end of the Caribbean Sea, covering the trade routes from Europe to the Panama Canal, from which it is distant about 1,000 miles.

Panama: The isthmus and the canal are of the highest importance to the United States, both commercially and strategically. The canal connects our coasts, opens to the commerce of the world the west coast of South America, which was formerly accessible only via the difficult and dangerous passage of Cape Horn, and greatly enhances the value of our naval forces by permitting their concentration within a short period of time on either of our coasts.

The distances from home ports and from the principal ports of Europe and Asia manifest the importance of the canal both for trade and war. On the Atlantic side, Colon is 5,435 miles from Liverpool, 2,281 miles from New York, 1,251 from Key West, Florida, and 1,705 miles from Galveston, Texas; on the Pacific side, Panama is 3,773 miles from San Francisco, 4,672 miles from Honolulu, and 8,587 miles from Yokohama, Japan. Panama is the gateway between the two great oceans, and its situation is such that in the hands of an enemy of the United States it would ever be a menace to our commerce, our prosperity, and our peace.

Hawaii: The Hawaiian Islands, the most important of which is Oahu, containing Honolulu, the largest of the group as well as the well-equipped naval base of Pearl Harbor, lie almost midway across the Pacific Ocean, and constitute an important outpost in our military and naval system, especially valuable in the defense of the Pacific coast and the Panama Canal.

These islands, in the possession of a rival nation of the United States, would furnish a most valuable base for military operations against our shores. They are also a stepping-stone across the Pacific to the Philippines and Japan, and are of the greatest value in the commerce of the United States with the Orient.

Their distances from home and Asiatic ports emphasize strongly their intermediate situation in the Pacific. Honolulu, the capital and only important port, is distant 2,418 miles from San Francisco, 4,672 from Panama, 5,475 from Manila (the shortest line), and 3,915 from Yokohama.

The Philippines: The holding of the Philippine Islands has been described as a national rather than a military policy. They are our most distant possessions and our greatest element of weakness. Lying almost at the shores of the Asiatic continent, they have practically no strategic value, and are in reality a source of weak-

ness rather than of strength.[1] In case of a war with an Asiatic power the normal peace garrison would be far too small to offer even a fair defense; it would be beyond the bounds of possibility to give them a war-strength garrison in the early stages of a war, or to relieve them until we had completely established our control of the sea. They would therefore probably fall an easy prey to our adversary, and could be recovered only in the later stages of a war, if ever.

The distance of Manila, the capital, from the nearest home port, San Francisco, is about 8,000 miles, requiring a thirty-day voyage for our transports; from Honolulu it is 5,600 miles; while from Nagasaki, Japan, it is but 1,514 miles, and from Hongkong, China, but 723 miles.

Alaska: Our largest outlying dependency, Alaska, is located at the northwestern extremity of the North American continent, and its situation is almost midway between our western coast and the northern shores of eastern Asia. The ports of the Alaskan peninsula, Dutch Harbor, Kiska, and Unalaska, are in the neighborhood of 2,000 miles from Seattle, our northernmost port on the Pacific, and between 2,500 and 3,000 miles from the shores of Japan. The control of Alaska,

[1] A well-defended naval base at Guam in addition to that at Honolulu would materially alter this unfortunate condition.

as is the case with all our oversea possessions, will always depend upon our control of the sea.

Guam: Lying nearly halfway between Hawaii and the Philippines, at 145° east longitude, and 13° 30′ north of the Equator, is the little island of Guam, acquired by us in our treaty of peace with Spain in 1890, at the same time that we obtained Porto Rico and the Philippines. Possessed of the small harbor of San Juan d'Apra, which might be developed to receive and protect a large naval force, this island has been seriously considered by many army and navy officers as a strong strategic naval base in the Pacific, a sort of Gibraltar in our pathway across that ocean.

Its small size makes its defense feasible by a small garrison, while its strategic location makes it fully as important in maintaining our control of the ocean as is Honolulu. The main difference is that Honolulu is important as a base in our defensive system, whereas Guam would be an offensive naval outpost for aggressive commercial or naval warfare.

II

Resources of the United States

In Men

The latest estimates of the Department of Commerce place the population of the United States in 1915 at 100,264,485. Of these there are 20,473,684 men between the ages of eighteen and forty-five years, the period during which all citizens of the nation are available for military service under the provisions of the National Defense Act of 1916.

It should not be expected that all of these men, or even a major fraction of them, would be available for actual service, for many reasons. A large number might be exempted on account of their foreign birth, since the number of foreign born among them is nearly 4,500,000; many could not be withdrawn from the necessary industries of the country, though, in a war in which the very existence of the nation might be imperiled women might, and possibly would, replace men in many industrial occupations; many would be rejected as physically unfit or for family reasons, so that those actually available would probably not exceed 50 per cent of the whole.

The total resources in men of military age must therefore be regarded as theoretical, and the actual resources must be estimated at a maximum figure not exceeding 50 per cent of the whole number, or about 10,000,000 men.

Even with these resources, only about one-tenth of the actually available men could be utilized at at the outbreak of war, due to the lack of the necessary armament and equipment, not to speak of the training necessary to convert them into a fighting force.

In addition to the 10,000,000 men referred to, who would be available at the outbreak of a war, we must take into consideration the number of youths who annually become of military age, and who could be called into service in a war whose duration should exceed a year. This class may well be termed our most valuable source of men, as the experience of all our wars makes manifest the fact that they have been fought in great part by our young men. The number who become annually available in this way is estimated at the present time to be nearly 1,000,000, of whom fully 600,000 are suitable for the military service. This annual increment may be largely counted upon in a serious war to fill the casualties in our forces, and to furnish the very best material for new troops. Even more, if we adopt an adequate program of preparedness they will give us our first line of troops.

Resources of the United States

One of the great questions that has haunted the minds of military men who have carefully studied our resources has been the supply of men suitable in all respects to officer the great masses of troops that would be called out in war. The history of our previous wars has been one of inefficient and untrained officers, and the cost of their training through the actual experiences of war has been heavy both in blood and treasure. How shall the problem be solved in the future? We have, it is true, our professional classes, men of education and ability, but so few of these have had the necessary training to fit them for the duties of officers in war that we should probably find ourselves in even worse condition than was Great Britain early in the present war, after her small but efficient regular army had been practically wiped out.

According to the report of the Commissioner of Education in 1914, there were approximately 173,000 young men, practically all of military age, attending educational institutions of the college class. Many of these young men had received military instruction as a part of their college training, and would be an important source from which to draw officers in case of war. The future offers greater advantages in this respect than the past, as doubtless a far greater number of students will receive the essentials of military training as part of their college course, and many of

these will be incorporated into the Officers' Reserve Corps that is to be organized under the present Defense Act. An estimate of one-fifth of the whole number, or somewhat more than 30,000, would probably represent the total annual resources in men suitable to become officers.

To sum up our resources in men, therefore, we find them approximately as follows:

Total resources in men of military age (18 to 45 years)	20,473,684
Available men of military age	10,000,000
Total that can be armed and equipped at present	1,000,000
Annual increment of those who reach the age of 18 years	1,000,000
Available part of this increment	600,000
Number who will be annually available as officers	30,000

When we say that these are our resources in men, it is well to make it clear that they are the raw material only. Even though they were armed and equipped in the most modern way, they would still be only an armed mob, worthless for military purposes, for they would not possess the skill to make effective use of their weapons; even though they were partly trained, they would not constitute a fighting force, for they would lack the organization. Cohesion and cooperation would be impossible.

We are a business nation, and as such we recognize that success in business is primarily de-

pendent upon economical and efficient production. These in turn depend upon skilled operatives in every department of an industrial or business institution, and upon the thorough organization of these operatives for their work.

Without skilled operatives the character of the product is inferior; without a high degree of organization, the labor of each man is not utilized to the fullest extent, and the amounts of the production falls below the standard of success.

Success in military affairs is even more dependent upon the training and organization of men than success in business. The competition in war is keener; it is direct and aggressive, and success for one side means failure for the other. And failure is disaster.

A man who, with unskilled labor, and without organization, should attempt to operate a watch factory in competition with the established watchmaking plants of the country, would be universally held to be insane or a fool; yet many of our intelligent and conservative citizens, who would doubtless so consider him, seem able to contemplate with complacency the far more dangerous possibility of plunging into war with our untrained, undisciplined, and unorganized masses against any power in the world. Yet the certain results are not to be compared.

In the former case there would be a ridiculous commercial failure; in the latter a national dis-

aster fraught with appalling sacrifice of blood and treasure, loss of national prestige, loss of territory, loss of commercial advantages, and most of all, possible deprivation of the opportunity of retrieving our misfortune.

We have the resources, and they are more than ample. Shall we train and organize a goodly portion of them for the skilled work of maintaining our national rights and our national existence, or shall we court future disaster by neglecting our national defense?

In Money

In a military sense, gold is the basis of the monetary wealth of a nation. So long as a country contains within itself the necessary resources for war its wealth in money remains within its borders and its credit abroad is undiminished. When it must obtain the sinews of war from friendly foreign countries, these must be purchased in excess of the normal commerce, and the excess must be paid for in the international medium of exchange, which is gold. It is therefore only when the necessary munitions or supplies must be purchased abroad that the outflow of gold from a country at war takes place and the credit of the government commences to decline. Interior loans, or issues of paper money, which are virtually loans, may be made by a government, based upon the amount of gold in its possession,

without impairment of its credit, since it merely pledges its resources to its own citizens or subjects, but the gold itself is largely the index of its international credit.

The stock of gold in the United States on August 1, 1914, at the outbreak of the European War, was $1,887,270,664, or approximately $19 per capita. This amount has been very materially increased, due to the sale of supplies and munitions to European powers, for which no exchange in merchandise has been possible, though they have been partly paid for by the transfer to the United States of American stocks and other securities held abroad before the war. The total of gold in the country on October 1, 1916, has been reported to be $2,636,009,564, or more than $26 per capita.

In addition to the gold, the interior circulation of the country is materially augmented by the issue of silver coin and paper money, based on the credit of the government, or upon that of the national banks. Our silver and paper currency is on a parity with gold and is an important part of our monetary resources, though our exterior credit is not affected to any great extent thereby.

There was in circulation at the beginning of 1914 the large amount of $1,556,300,000 in silver and paper, or roughly $15.50 per capita. Assuming that this amount has not materially changed during the past two years, and that the

gold within the country has increased as has been indicated, the total money now in the United States is therefore approximately $4,200,000,000, or about $42 per person, a higher figure than ever before in the history of the country.

The location of this enormous amount of money becomes a matter of critical importance, from the viewpoint of a possible foreign war. The report of the Comptroller of the Treasury shows that on June 23, 1915, the total deposits in the savings banks of the country were $4,997,475,975.79, of which $3,834,245,108.79 were deposited in the banks of New England, New York, Pennsylvania, New Jersey, Delaware, Maryland, and the District of Columbia. These savings-bank deposits are significant in that they would seem to indicate the probable distribution of the money of the country. Even though they be not definite, they indicate that a large part of our monetary wealth is concentrated in the northeastern Atlantic States.

What would probably be the attitude of a foreign nation, bearing a grudge against the United States, and emerging from the present war broken in wealth and resources of all kinds, with the single exception of immediately available ships, veteran troops, and munitions? Would not the conveniently located wealth of the United States be a temptation for a predatory nation?

Money has rarely, if ever, been itself the basis

of taxation; it is the medium of exchange, and is converted into tangible or intangible property, at the will of the individual possessing it. The property is the basis of taxation, and the estimate of the resources of the government for war should be based upon the taxable valuation of all property, real or personal, over which it can legally exercise control.

The wealth of the United States in this respect was estimated in 1914 at the enormous figure of $187,739,071,090, or approximately $1,965 per person, making us the richest nation per capita in the world. The normal revenue of the Federal government, collected through customs, internal revenue, income tax, and other minor sources, scarcely exceeds one-half of one per cent of the total wealth, though State and local taxes may increase the taxation in some cases to as much as one per cent.

The limit of taxability of our wealth has never been tested. The net ordinary receipts of the government for the year 1915 were $695,663,190. It is safe to say that for a short period this amount could be increased tenfold, and the enormous amount of nearly seven thousand millions could be raised annually for the preservation of our institutions.

The taxability of our monetary resources would be seriously affected were our shores to be invaded. Taxes in the area occupied by the

enemy would cease at once, so far as the United States are concerned, though the inhabitants of the occupied territory would be immediately taxed to the utmost to meet the forced contributions of the invader. Were New York and its vicinity seized and occupied by a foreign foe, not only would what remained of the State be bereft of the large amounts regularly paid as taxes, and the United States be instantly deprived of the immense sums that pour into the Treasury through the New York Customhouse, but the wealth of the city and vicinity would be requisitioned in a manner that would make the forced loans reported to have been collected in Belgium seem insignificant. And for what purpose? Solely to enrich our enemy and enable him to extend his aggression against us.

Thus, while we remain unprepared and unprotected, our very wealth, on which we count as one of our prime resources, becomes on the contrary a serious menace and almost an invitation to a predacious foe to attack us.

In Supplies

The resources of the United States in supplies are of three kinds—agricultural, mineral, and manufacturing.

Agricultural: In the matter of agricultural supplies, the country is self-supporting, with a

surplus of a large number of its products for export. Certain articles, however, we must import; sugar, because the amount produced at home is not sufficient for the needs of the people; coffee and rubber, which may be classed as an agricultural product, because we do not produce them; and some minor articles, for similar reasons.

The statistician tells us that the value of the farm products for the year 1914 was $8,498,371,413, which gives a valuation per capita of about $85. These are the food products consumed by men and animals, and their amount has up to the present day been sufficient for the maintenance of our standards of living.

In animal industry, the value was $5,969,253,000, or nearly $60 per capita. Deducting from this the value of horses and mules, approximately $3,500,000,000, the remainder indicates the value of meat-producing animals, $2,469,253,000, or about $25 per capita.

It is in the wasteful use of food and other supplies that the great lack of economy of our people manifest itself. It has been said that a French family could subsist on the food that is wasted and thrown away by an American family of the same size, and this statement is almost literally true. However, as the cost of living has materially increased in recent years, while the average income has not grown in proportion, it

is believed that the endeavor of our people to maintain their usual standards of living will induce them to habits of economy to which they have in the past been strangers. Such habits, entering the home life, will gradually be communicated to our economic and political life, and may ultimately lead us to conserve and husband our national resources, with the result that we shall be both richer and stronger.

Among the animals whose value is above given, it is of the greatest interest to enumerate 21,195,000 horses and 4,479,000 mules. These form a real and valuable resource for military purposes. While it is probable that in the future motor transport will largely replace animals in our industries, and will play a prominent part in our military operations, it will be a long time before the horse and the mule will cease to be a prominent factor in our military organization.

The number that will be necessary to equip the largest army that the United States will ever put into the field may always be acquired by purchase, or, in a great national crisis, they may be requisitioned. Also, it is not to be supposed that all of the great total above shown will be suitable or available for army uses. Only a small fraction could be considered as fit for military purposes, but even if one-tenth of them should conform to the specifications of cavalry, artillery, or transport animals, it would make available for

the army the great total of 2,500,000 animals, sufficient to provide the necessary mounts and transportation for an army of 4,000,000 men.

Minerals: Our minerals are a very important part of our immense natural resources. Gold, silver, iron, copper, nickel, zinc, and many other metals are produced in ample quantity for our own consumption, with a large margin for export. From our deposits of coal and oil are produced plentiful supplies for carrying on our manufacturing and transportation industries. Our annual production of the former approaches 500,000,000 tons, and that of the latter was, in 1914, 265,762,535 barrels, two-thirds of the world's supply, while our mineral products for the year were valued by the Geological Survey at $2,114,946,024.

Many of these products form the bases for a large part of our manufactures, or are consumed therein. They are essential for a self-contained nation, and are fortunately sufficient to keep up our manufacturing industries, or, with one exception, to supply us with munitions, even though we should be cut off from all commerce with foreign nations by the loss of the command of the sea.

As above excepted, the only mineral of importance that is not produced in the United States, and the one which is unfortunately abso-

lutely essential in the manufacture of munitions of war as well as in the explosives used in our industrial life, is fixed nitrogen. Nitrogen is not only the basis of every modern explosive, but is also one of the important elements of fertilizers, and is used extensively in many arts and manufactures. At the present time our entire supply is obtained from South America. Fortunately the genius of the chemist has solved the problem of producing this essential, which is found in a native state in only a few spots on the earth's surface, by a synthetic process, whereby it is extracted from the air. This method has been utilized to a great extent by Germany in the manufacture of explosives for her army in the present war, and Congress has so far profited by her experience as to provide for the construction of the necessary plant for its manufacture for our services.

Manufactures: Our greatest resources by far, from a monetary and a military standpoint, lie in our great industries. These, starting from almost nothing a century ago, have grown to an enormous extent, until we are now one of the greatest manufacturing nations of the earth. According to the census of 1910 the value of our annual production totaled $20,672,052,000.

The kind and character of our manufactures are myriad, iron and steel, cotton and woolen

goods and clothing, glass, boots and shoes, agricultural, electric and other machinery, automobiles, wagons and carriages, steam and electric railway material being only a few of the most important of them.

In fine, the variety and amount of our manufactured products are such that our people could be fully supplied with all the necessities of that nature, even though we should be cut off by war from the commerce of the world, but providing always that we succeed in keeping the enemy from our soil.

Our agricultural, forestry, and mining industries provide a plentiful supply of raw material of all kinds for the factories, with the single important exception of rubber, of which we imported in 1915 172,068,428 pounds.

Since the commencement of the Great War in Europe, due to the demand on the part of all the belligerents that have access to our markets for guns, ammunition, and equipment, there have also grown up in all parts of the country, and especially in the Eastern States, huge munition plants, capable of producing large quantities of cannon of every type and caliber, small arms, powder and other explosives, shells, shrapnel, small-arms ammunition, and every class of equipment used by the warring nations. These plants have enormously developed the munition industry in this country, and they, as well as the great

corps of workmen who have become skilled in the manufacture of war material, must be recognized as a present resource for war whose value cannot be overestimated. Data with regard to the character and quantity of the munitions now produced in the United States are not available, but the industry has grown to enormous proportions.

The industries of the country are not at the present time organized, though the question of their coordination in the defense of the nation has been agitated along with the all-important question of preparedness, and is still a problem to be solved by the government.

The Sixty-fourth Congress, in framing the National Defense Act, approved by the President on June 3, 1916, included the following provisions for the mobilization of our industries:

The President, in time of war or when war is imminent, is empowered, through the head of any department of the government, in addition to the present authorized methods of purchase or procurement, to place an order with any individual, firm, association, company, corporation, or organized manufacturing industry for such product or material as may be required, and which is of the nature and kind usually produced or capable of being produced by such individual, firm, company, association, corporation, or organized manufacturing industry.

Compliance with all such orders for products or material shall be obligatory on any individual, firm, association, company, corporation, or organized manu-

facturing industry or the responsible head or heads thereof and shall take precedence over all other orders and contracts theretofore placed with such individual, firm, company, association, corporation, or organized manufacturing industry, and any individual, firm, association, company, corporation, or organized manufacturing industry or the responsible head or heads thereof owning or operating any plant equipped for the manufacture of arms or ammunition, or parts of ammunition, or any necessary supplies or equipment for the army, and any individual, firm, association, company, corporation, or organized manufacturing industry or the responsible head or heads thereof owning or operating any manufacturing plant, which, in the opinion, of the Secretary of War shall be capable of being readily transformed into a plant for the manufacture of arms or ammunition, or parts thereof, or other necessary supplies or equipment, who shall refuse to give to the United States such preference in the matter of the execution of orders, or who shall refuse to manufacture the kind, quantity, or quality of arms or ammunition, or the parts thereof, or any necessary supplies or equipment, as ordered by the Secretary of War, or who shall refuse to furnish such arms, ammunitions, or parts of ammunition, or other supplies or equipment, at a reasonable price as determined by the Secretary of War, then, and in either such case, the President, through the head of any department of the government, in addition to the present authorized methods of purchase or procurement herein provided for, is hereby authorized to take immediate possession of any such plant or plants, and through the Ordnance Department of the United States army, to manufacture therein in time of war, or when war shall be imminent, such product or material as may be required, and any individual, firm, company, association, or corporation, or organized manufacturing industry, or the responsible head or heads thereof, failing to comply with the provisions of this section shall be deemed guilty of a felony, and upon conviction shall be punished by im-

prisonment for not more than three years and by a fine not exceeding $50,000.

The compensation to be paid to any individual, firm, company, association, corporation, or organized manufacturing industry for its products or material, or as rental for use of any manufacturing plant while used by the United States, shall be fair and just.

The Secretary of War shall also make, or cause to be made, a complete list of all privately owned plants in the United States equipped to manufacture arms or ammunition, or the component parts thereof. He shall obtain full and complete information regarding the kind of arms or ammunition, or the component parts thereof, manufactured or that can be manufactured by each such plant, the equipment in each plant, and the maximum capacity thereof. He shall also prepare, or cause to be prepared, a list of privately owned manufacturing plants in the United States capable of being readily transformed into ammunition factories, where the capacity of the plant is sufficient to warrant transforming such plant or plants into ammunition factories in time of war or when war shall be imminent; and as to all such plants the Secretary of War shall obtain full and complete information as to the equipment of each such plant, and he shall prepare comprehensive plans for transforming each such plant into an ammunition factory, or a factory in which to manufacture such parts of ammunition as in the opinion of the Secretary of War such plant is best adapted.

The President is hereby authorized, in his discretion, to appoint a Board on Mobilization of Industries Essential for Military Preparedness, nonpartisan in character, and to take all necessary steps to provide for such clerical assistance as he may deem necessary to organize and coordinate the work hereinbefore described.

The execution of this portion of the Defense Act, which has been initiated by the War Department, under the direction of the Secretary of

War, is intended to place our industries on such a footing that they will be prepared on call to rush to the assistance of the government and to provide the necessary munitions in the shortest possible time. The fact that Congress considered the welfare of the country as superior to the rights and inclinations of the individual manufacturer, is demonstrated by the power placed in the hands of the Secretary of War to seize and operate the plant of an unwilling manufacturer, and the penalties that may be imposed upon him who in a national emergency refuses to "do his bit."

At the same time in order to facilitate the conversion of any plant to the uses that may be of most advantage to the government in war the following section of the act, which speaks for itself, was included:

> The Secretary of War is hereby authorized to prepare or cause to be prepared, to purchase or otherwise procure, such gauges, dies, jigs, tools, fixtures, and other special aids and appliances, including specifications and detailed drawings, as may be necessary for the immediate manufacture, by the government and by private manufacturers, of arms, ammunition, and special equipment necessary to arm and equip the land forces likely to be required by the United States in time of war.

This proviso means preparation in time of peace for the rapid conversion of any manufactory to the nation's uses, so that it may enter

upon the production of the needed munitions with the minimum delay. It will be possible also to avoid confusion in preparing for the work, such as undoubtedly would result if the matter of obtaining the necessary tools were left until the outbreak of war.

When the provisions of these sections of the law have been complied with, it is to be expected that the majority of the industrial plants of the country will not only be placed in a position to furnish the government with the supplies that may be required, but will have the character and quantity of their output so supervised that, on the outbreak of war, only the kind and amount needed by the military establishments will be produced, that there will be no duplication, and that the authorities and the manufacturer will work harmoniously for the best interests of the entire country.

Again, as in the case of our monetary wealth, a study of the location of our industrial resources reveals the fact that practically half of them are located in the Atlantic Coast States. Of an annual industrial output whose value is estimated at between twenty and twenty-five thousand millions of dollars, more than eleven thousand millions are produced along our Eastern coast.

The subjoined table indicates the annual value of the various manufactured products in the Eastern States, together with the total value of

ANNUAL VALUE (IN MILLIONS OF DOLLARS)

OF CERTAIN OF THE MORE IMPORTANT PRODUCTS OF MANUFACTURE IN THE EASTERN STATES, WITH TOTAL VALUE OF ALL MANUFACTURES, AND THE AGGREGATE NUMBER (IN THOUSANDS) OF PERSONS EMPLOYED

Products	Maine	New Hampshire	Vermont	Massachusetts	Rhode Island	Connecticut	New York	New Jersey	Delaware	Pennsylvania	Maryland	Virginia	North Carolina	South Carolina	Georgia	Florida
Butter, cheese and cond. milk	....	....	8	....	....	....	42	....	....	14	....	....	....	....	....	....
Meat packing	....	....	....	48	....	....	130	....	....	55	13	....	....	....	....	....
Bakery products	....	....	....	27	4	8	86	21	....	46	7	....	....	....	....	....
Canning	8	....	....	7	....	....	19	4	3	9	14	2.5	....	....	....	....
Confectionery	2	....	....	15	....	2	26	5	....	14	6	2.5	....	....	....	....
Flour and grist	....	....	....	....	....	....	70	7	....	46	10	17	9	....	....	8
Breakfast foods, etc.	....	....	....	3	....	....	17	5	....	5	....	....	....	....	6	....
Cotton goods	....	32	....	190	46	23	21	14	....	32	8	9	72	68	44	....
Woolen and felt goods	29	29	7	142	77	30	32	37	....	78	....	....	....	....	....	....
Clothing	....	....	....	35	....	....	560	22	....	78	....	....	....	....	....	....
Furnaces (iron and steel)	....	11	....	....	....	....	56	8	....	372	8	16	....	....	....	....
Foundry and mach. shops	....	....	....	87	24	69	155	68	....	210	13	6	....	....	6	....
Lumber and timber products	27	16	....	24	....	....	73	14	....	58	12	36	34	13	25	21
Leather, finished	3	....	....	41	....	....	38	39	13	78	4	9	7	....	....	....
Boots and shoes	15	42	....	233	....	....	50	10	....	18	....	7	....	....	....	....
Knitted goods (especially hose)	....	5	2	15	5	7	67	4	....	49	2	3	6	2	2	....
Chemicals	....	....	....	....	....	....	36	23	....	17	3	....	....	....	....	....
Fertilizers	....	....	....	....	....	2	4	8	....	7	10	8	6	9	17	4
Cottonseed products	....	....	....	....	....	....	....	....	....	....	....	....	8	10	23	....

ANNUAL VALUE (IN MILLIONS OF DOLLARS)—*Continued*

Products	Maine	New Hampshire	Vermont	Massachusetts	Rhode Island	Connecticut	New York	New Jersey	Delaware	Pennsylvania	Maryland	Virginia	North Carolina	South Carolina	Georgia	Florida
Brass and bronze	....	....	....	7	....	70	22	6	....	9	....	....	....	....	....	....
Copper, tin and iron	2	....	....	7	....	4	38	12	....	18	17	2	....	....	2	....
Automobiles	....	....	....	11	4	12	32	3	....	13	1	3	3	....	3	....
Carriages and wagons	....	....	....	3	....	1	13	3	....	13	1	3	3	....	3	....
Railroad cars	....	....	....	8	....	....	22	10	....	76	9	10	....	....	6	....
Electrical machinery	....	....	....	27	7	....	50	28	....	32	....	....	....	....	....	....
Total value all manufactures, including above (in millions)	176	165	68	1491	280	490	3370	1146	53	2627	316	220	217	113	203	73
[1] Total persons whose livelihood depends upon mfg. plants (in thousands)	98	84	38	644	122	234	1203	363	24	1002	126	121	133	78	118	65

[1] Totals are only approximate.

Grand total value of manufactured products in the States enumerated..... $11,008,000,000
Aggregate of persons employed in manufactures in these States..... 4,455,648

Note: The manufacturing industries are largely dependent upon maintenance of credit (which implies confidence that normal conditions will continue), upon continuance of transportation systems, and upon oversea commerce. A blockade of the coast would seriously affect all, an invasion would ruin many, and as they are to a large degree interdependent, the ill effects would extend far beyond the industries of the territory invaded.

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the manufactures in these States, and the aggregate of persons whose livelihood depends upon these industries.

Transportation

To discuss adequately our immense resources in transportation, covering the entire expanse of our country, is too broad a subject for this volume, and it must suffice to consider them from a purely military point of view, with special reference to their uses in the defense of our territory.

Military resources in transportation may be considered to be of three classes: (1) Railroads, including suburban electric lines; (2) motor transport, which comprises automobiles for the rapid transport of general and staff officers, and at times for the quick movement of combatant troops, and autotrucks and tractors for the transportation of supplies, ammunition, and artillery; and (3) animal transport, which is still found to be indispensable for troops in the immediate field of operations of an army.

Railroads: In railroads alone we have in operation 252,230 miles, over which 64,769 locomotives draw our people and the products of our soil and our factories in 53,466 passenger coaches and 2,450,356 freight cars. Over a million passengers were carried in the first six months of 1915, and the total freight transported

in the same period was equivalent to moving three hundred million tons one mile, or one hundred thousand tons from New York to San Francisco.

The construction of our railroads has developed along commercial and economic lines, with no thought to their strategic use. How different from the system in European countries, where every line has been carefully located to satisfy both commercial and military conditions!

The transportation of our products and the enormous passenger traffic incident to our American life have developed great systems of commercial roads between the centers of population and industry, with their feeders connecting the important points in the areas through which the main lines pass, and reaching the most remote points to collect their products or to distribute supplies.

The government has never had a military policy with regard to the railroads, though they have always been recognized by the professional soldier as one of the necessities of war. Studies have been prepared on the utilization of our great systems, but have invariably been regarded by our civil public administrators as purely academic and only of application in the extremely remote contingency of war.

As a consequence, the proper organization of the railroads for war purposes has never been

actively considered, and we are now only in the beginning of that great and important task.

It is therefore only accidental if any of our railroads satisfy the conditions of the strategy of defense.

In the eastern and more populous section of the country, especially in the area comprising New England and the Central Atlantic States, the great cities of Boston, New York, Philadelphia, Baltimore, and Washington are connected by the main lines of great railway systems, while the numerous branch lines connect the smaller points and run to the coast in many places. These form a complete network of roads that would be invaluable for either offense or defense should the area be invaded. They would be of the greatest use to us in defense, but their loss would be a grave disaster.

The great systems of the New York Central and Pennsylvania roads connect the whole Eastern section with the Middle West, the granary of the nation, and insure the food supply of the people of our great manufacturing section and of the troops that might be required for the operations of the defense of the area.

The great agricultural area of the central part of the United States is practically immune from invasion, but its railroads are essential for the supply of agricultural products for the rest of the country. Their remoteness from the avenues

of invasion makes their subsidiary lines of minor importance in a military sense.

The Rocky Mountain chain is now crossed by no less than six great trunk lines: the Great Northern and Northern Pacific in the northern part, from St. Paul to Seattle; the Union Pacific and the Denver & Rio Grande through the central part; and the Santa Fe and Southern Pacific across the southern end of the range. All these are valuable lines in the defense of the Pacific coast, but all of them have the weakness of passing through defiles which, if lost to an enemy, would make the recovery of our Far West a matter of great difficulty and cost. Even the destruction of some of the tunnels would seriously hamper a force engaged in the defense of the coast. The Pacific coast itself is divided by natural obstacles into two great areas, the Puget Sound area, comprising the States of Washington and Oregon, and the California area. These two areas are connected by a single line of railroad from San Francisco to Portland, which passes over the crest of the Siskiyous, and which may be disabled and the areas separated by the destruction of one or more tunnels. This line would have to be carefully guarded in order that the forces cooperating for the defense of our Pacific coast may be properly connected.

Although our railroads are not yet organized for defensive military purposes, much may be

done under the National Defense Act to prepare them to cooperate with the Federal government in case of war.[1]

Automobile Transport: The past ten years have been marked by a rapid increase in the number of motor vehicles of all kinds in all parts of the world.

As has usually been the case when a new article of luxury or economic convenience has been produced, we quickly became the leaders in their production and use. The manufacture of cars of low price, together with the cheapness of motor fuel, have placed these accessories to business and pleasure within the reach of a large proportion of our people, and they have not been slow to avail themselves of their advantages.

The number of automobiles in the United States in 1915 exceeded 2,000,000, and in addition there were several hundred thousand autotrucks and tractors of all types and capacities.

Our factories are at the present time easily capable of producing half a million motor vehicles annually, so that, in case of war, our resources should be sufficient to furnish all the auto transport that may be needed by the maxi-

[1] It should not be lost sight of that these railroads represent the minimum peace needs of our people; there is no reserve for war and all seized for military purposes would be lost to the use of those now depending upon them for the necessities of life.

mum force that we should ever be able to put into the field.

The industry is one that will be organized under the National Defense Act, not only with a view to producing whatever may be needed for military purposes, but also for the purpose of standardizing all products, so that a diversity of spare parts may not be required, and separate motor repair establishments may not be necessary to accommodate each of the numerous types that now exist in the automobile industry.

With the automobile has come the development of our roads. Our national development has been a history of railroad building; civilization moved out along the railroad lines, with a short haul from the farm to the railway station. As a consequence we have never considered the road as an accessory to our economic life.

Even before the advent of the motor vehicle, there was from time to time a movement in favor of good roads, but it was never general and no extensive system of roads was ever constructed.

The automobile has revolutionized this situation. It requires good roads for its satisfactory operation and the long distances covered by it demand great extent. Not only the pleasure seeker of the city, but the farmer in the country, have realized the value of the motor car, and the demand for good roads traversing the entire country is now universal.

A number of States have developed their roads to a high state of perfection. New York, New Jersey,[1] Maryland, and California are notable in this respect, and, as they all lie in areas that may become theaters of war, their development of the roads has greatly favored military preparedness by providing a series of surfaced highways that will permit the extensive use of motor transport in the operations of troops.

Animal Transport: Animal transport is the oldest and most reliable means of transportation known to man. The horse accompanied Alexander, Hannibal, and Cæsar in their campaigns, and has been the honored companion of the soldier in every war from their day up to the present. With the introduction of the steam engine and the locomotive, the prediction came that the day of the horse would soon pass. This prediction was revived with the development of the electrically propelled vehicle, and again when the motor car was produced. Nevertheless, in the economic life of our nation and in our military institutions, the horse, and his humbler relative, the mule, still maintain their foothold, though their importance has been greatly reduced.

[1] The State of New Jersey has agreed to consult the military authorities before expenditures of annual appropriations with a view to construction of new, and improvements of existing, roads and bridges in accordance with the determined needs for defensive operations in so far as this may be done in conformity with the object of the appropriation.

In the military service the horse and the mule maintain a stronger hold than in any other walk of life.

At the outbreak of the great European War, it was predicted that their places would soon be taken by motor vehicles, but the prophecy failed, and in certain parts of the organization of the armies in the field it has been found that the horse must still be used both for saddle and transport purposes.

Railroads may be disabled by the destruction of their tracks, the running off of their rolling stock, the blowing up of their bridges. Automobiles and trucks are dependent for efficient service upon good roads, and while in some parts of the country they may well replace animal draft, in others they can be depended upon only in fair weather, and sometimes not at all. We have in the United States 2,273,131 miles of road, of which 247,490 miles, only 11 per cent, are surfaced, and of these only 39,988 miles are maintained by State aid. Military operations may be necessary over any part of these roads at any season of the year, and the occasions will be frequent when the motor vehicle cannot be relied upon.

For all-weather work, therefore, we must still place our final dependence on the horse and the mule. Our resources in both are very great, 21,000,000 of the former and 4,500,000 of the

latter, sufficient to assure us the horses for our mounted troops, mules for the transport of supplies and ammunition, while our vehicle factories are of sufficient capacity to produce all the necessary wagons and carts needed for our forces.

That the rôle of the horse in war is still a prominent one is evidenced by the continued use of animal transport by all the belligerent nations of Europe, despite the existence in places of a complete network of the best roads in the world and the generous use of the motor wherever it performs the work satisfactorily.

We, who are not so favored in the matter of highways, can scarcely yet afford to dispense with the services of the reliable "friend of man."

Communications: As an adjunct to our resources in transportation must be considered our great systems of communication, both by telegraph and by telephone. Rapidity of communication is the complement of celerity of movement. It is no less important to be able to transmit intelligence or orders quickly than to send troops rapidly to a threatened point. If time is lost in sending the information or transmitting the orders, the rapidity of the movement of the troops may be unavailing.

Our telegraph and telephone statistics are such that we may well be proud of them. We not only lead any country in the world; we lead the world

itself. No town of a thousand inhabitants is without a telegraph station, and no hamlet is so isolated that it is without telephonic communication with the outside world.

Nearly twenty million miles of wire are strung on our poles. Out of fifteen million telephones in the world, we have nearly ten million, one telephone for each ten persons of our entire population.

Cables cross the oceans from our shores to Europe, South America, and Asia, and though some of them be cut by an enemy, we may hope that others may always remain to keep us in communication with the world. Yet even should our cables be destroyed, there yet remain several great wireless stations, both public and private, that will assure our continued communication with the outside world.

These communications, the cable systems, the wireless stations, telegraphs, the ramifications of the telephone to the most remote points of our territory, are military assets of the highest order.

Though they are not organized under the government, the interior organization of the great companies that maintain them is well-nigh perfect, and their transition from private to public service should be simple. In this respect we are better prepared than in any other, though much yet remains to be done in the form of plans for placing these resources at the disposal of the

government whenever the emergency may demand it.

Munitions

We have indicated the extent of our raw materials and the available assets for transforming them into munitions of war, which include all materials and equipment needed by an army in active campaign. It remains to report our actual condition as to supply and estimate the time required to accumulate those articles which we now lack and without which any army we might raise would be ineffective.

The plans are all drawn, the authority to apply them enacted into law, but these are not enough. We need the munitions themselves.

Testimony of those charged with the supply of our army shows that in every branch we are deficient. Only the most important items will be touched upon here. It may be safely assumed that those of less importance have not received greater consideration in the appropriation and application of funds.

A board of field artillery officers recently made an exhaustive study of the equipment of European armies to determine just what would be required for an army of 1,000,000 men. They decided that to meet any great nation on terms of equality we should have 1,017 batteries of field artillery—we have 233. They decided we

should have heavy movable artillery such as is used in Europe—we have none. They decided that we needed 17,136,108[1] rounds of reserve ammunition—we now have 4 per cent of that amount.

They found that we needed 41,280 sets of harness for our field artillery in addition to the 12,470 sets on hand, and that we needed 28,000 sets of harness for our ammunition batteries, of which we have none. They decided that the heavier types of field artillery should have tractors for their transportation and autotrucks for their ammunition. None of these have been supplied.

In a summary the board stated the cost of completing our field artillery equipment as follows:

Gun and howitzer batteries.....	$103,452,124.60
Ammunition	291,891,290.50
Caissons, store wagons, etc.....	36,051,290.50
Harness	5,839,640.00
Tractors, autotrucks, etc.....	10,092,000.00
Total	$447,326,245.60

The project of this board of officers was cut approximately in half in passing through the War Department, and yet the chief of ordnance in a statement before Congress reported that, at the rate of appropriation (which our news-

[1] Recent information from Europe indicates that the board greatly underestimated the needs.

papers have considered munificent if not extravagant) it would require eight years to supply the demands. In other words, it will take eight years before we can hope to equip the artillery for an army of half a million men so that they can meet on terms of equality foreign armies now already equipped.

The long-range naval engagements of the present war, in which capital ships were sunk at ranges approximating ten miles, awakened us to the fact that our seacoast defenses were badly outclassed in the matter of ordnance. Here it is not so much a matter of money as of time. There are few plants capable of turning out large cannon, and the expense of installation is so great that a commercial company would be unjustified in incurring the initial expense unless assured of a large order. Plans now contemplate the strengthening of our coast forts with 16-inch high-power guns. Appropriation has been made for these, but the chief of ordnance estimates forty-four months as necessary to secure the first four guns.

As to rifles we have enough to equip an army of a million men. That is, we have about 700,000 modern rifles and between 300,000 and 400,000 of the type used in the Spanish War. European nations estimate, however, that there should be two rifles in reserve for every infantryman—we might well be guided by their experience. Our

reserve of ammunition would allow every man 200 rounds, a generous allowance for a one-day engagement, a fair allowance for a battle lasting two days; totally inadequate, however, for a sustained engagement such as seems to be characteristic of modern war.

In the machine-gun situation there is no encouragement. European nations have now equipped their infantry with one machine gun to each twenty-five men, and are trying to increase this supply. Our supply, including those under manufacture, would give our army of a million men a machine gun to every thousand men, and some of these would be of the older types, few if any of which are being used by the armies engaged in the great struggle. In order to equip our militia with four machine guns to the regiment in the recent mobilization we had to purchase some four hundred intended for the English army, and get from them also the ammunition, since the guns would not fire the ammunition issued to our service.

In the personal equipments of the soldier we are equally short. About 150,000 men of the National Guard were mobilized. Few organizations were fully equipped; many had the old-type equipment. Some went to the border in winter uniforms, some had summer uniforms and suffered from cold before being returned to their respective States.

Very few mounted organizations had the animals required. Some were furnished mounts totally untrained for the service. Some received no horses at all until a short time before they were mustered out.

Until the Columbus raid there was scarcely an autotruck in service with troops. Few regiments are now equipped with this modern necessity.

In the matter of aircraft we have indeed awakened, and strenuous efforts are being made to overcome the results of past neglect.

Many of our National Guardsmen were equipped with the old .38-caliber revolver on account of the shortage of automatics. Bombs are so rare as to be a curiosity, and trench mortars are nonexistent in our army.

This bald statement of unpleasant facts is injected to bring out strongly that resources and plans and even laws do not produce munitions of war.

We have many new munition plants, but they are turning out foreign models and foreign ammunition, possibly as good as our own, but a multiplicity of types is ruinous to efficiency. We manufacture more automobiles than any other nation, and yet it was a week before Pershing was equipped to follow Villa. We may be able to manufacture heavy artillery as well as any other nation, may have all the mate-

rials at hand, but the fact remains that other nations have it and we have not.

The cost of preparedness may seem staggering. There are those who would take the $451,000,000 needed for our field-artillery equipment alone as an argument against any appropriation at all. And there is much to be said in favor of that point of view unless we are prepared to pay the cost of a complete and well-balanced equipment, for half measures are nothing but a waste—they neither deter from attack, nor insure defense if attacked. But we should remember that France, Germany, England and Austria have been willing to equip for their defense not an army of one but of four million. Are they so much wealthier than we? Are their institutions, their liberty dearer to them? Are they willing to sacrifice more for their country than we are?

Let us now consider what would be the effect of war upon our industries, transportation, and communications, first, through a blockade of our Atlantic coast, and second, by the actual occupation of the principal industrial section of the Eastern States, that embracing Massachusetts, Rhode Island, Connecticut, New York, New Jersey, and eastern Pennsylvania.

First, by blockade. Our total annual exports amount in value to more than three thousand millions of dollars, of which fully two-thirds go out through the Atlantic and Gulf ports. Of

these New York alone exports $845,342,530; Georgia, $110,594,741; Maryland, $109,452,111; while the cities of Boston and Philadelphia approximate $65,000,000 each.

Figure what would happen in case our navy should be driven from the sea and our ports blockaded. Egress would at once be denied to exports valued at $2,000,000,000. In consequence thereof thousands of our industrial plants would be immediately forced to shut down, throwing hundreds of thousands of operatives out of work. One can better imagine than describe the hardship and suffering that would result to these multitudes whose means of livelihood would be thus cut off at a single stroke.

Ingress of imports would be equally denied. Work in handling both exports and imports would cease, and our docks and wharves would lie idle, thus increasing the army of the unemployed.

Practically two-thirds of the revenue collected by the United States from imports would be cut off, and the funds for conducting the ordinary administration of the government would thus be reduced by nearly $150,000,000 at a time when the revenues should be immensely increased to meet the expenses of war.

Thus, while our industries were in confusion, plants shutting down, employees out of work

and in need of relief from governmental sources, our revenues would be correspondingly reduced, and we should be forced to extraordinary measures to restore conditions so that we might make front against our enemy.

Second, by invasion. The invasion of our industrial area, the most tempting prize to a foreign foe, comprising the States of Massachusetts, Rhode Island, Connecticut, eastern New York, New Jersey, eastern Pennsylvania, and Maryland, would lose to us manufactories whose annual production is valued at more than eight thousand millions of dollars, one-third of our entire manufacturing industry. These would not only be lost to us, they would be converted into resources of the enemy against us. The four million workers, or those of them who should not be able to escape into the interior, would be forced to work the plants, as the Belgian workmen have been obliged to labor by their German conquerors, and the products of their toil would be utilized to sustain the invaders against the remainder of our country.

The banks of the section would be ruined, and at the mercy of the enemy. With at least one-third of the entire monetary wealth of the nation within their vaults, they would be levied upon by the invader and the funds that should be the sinews of defense would go to the support of the foe. Taxes, forced loans, and possi-

ble seizure would be the result of our failure to insure ourselves by a proper degree of preparedness against such a contingency.

It has been truly stated that such an invasion would cause the immediate ruin of every insurance company in the country. These repositories of the savings of the thrifty citizen who makes provision for his family against future disaster have their funds largely invested in the bonds and stocks of well-established industrial institutions. With the ruin of these institutions their income would fail, and they would be unable to meet their obligations in the way of death and other benefits. The citizen who is forehanded in the matter of life, accident, or industrial insurance would thus see his savings swept away in a moment simply because he has not been forehanded also in the matter of national insurance, in national defense, the physical protection that will guarantee to him the security of the savings that he makes against the day of personal misfortune.

In what situation would we find our railroads, our postal, telegraph and telephone service?

Our recent experience in the mobilization of the militia will give us some information from which we may be able to deduce the remainder of the answer to this question. In almost every instance the tardy mobilization of the National Guard was followed by further delay on the

part of the railroads in furnishing trains and in transporting the troops to the border. The number called out was considerably less than 150,000, and of these only small fractions were assembled in any specified locality, none of them exceeding 10,000 men. Why then the delay?

Our railroads are operated for normal conditions, with a very small margin for the abnormal. When that abnormal condition presented itself, it could not be met without undue congestion. Even the slight disturbance caused by the mobilization of fewer than 150,000 men was sufficient to be materially felt. Both passenger and freight service was interfered with, and the troop trains most of all because they were not usually given the right of way, though the law of 1906 provides that it shall be accorded them in time of war or when war is imminent.

Under our present conditions, what would be the result should circumstances require us to mobilize half a million men and concentrate them in the area about New York? In our actual state of preparedness, and with the prospect of an invasion and the confusion and industrial disorganization that would result therefrom, it is safe to say that such an operation would be practically impossible.

A glimpse of what should be is afforded by an occurrence that has been of great frequency in Germany during the present war.

You wish to go from one point to another by train, say from Berlin to Leipzig. You go to the station to buy your ticket, and are informed at the ticket office that you cannot get it on that day. If you are wise you will go to one of the suburbs, where the trains emerge from the subways or closed cuts through which they traverse the city, and wait for the passage of trains.

Presently the movement begins; train after train, full of soldiers, pass at intervals of from fifteen minutes to half an hour. This continues through the entire day and perhaps the following day. On the next the normal traffic is resumed, the ticket to Leipzig can be bought, and the journey made as in times of peace.

This is all the result of organization, of not trying to provide simultaneously for both civil and military traffic. The fate of the nation rests upon the military situation, and civil traffic must give way before it. The prompt arrival of the troops at their destination may mean military success, whereas delay may result in disaster. In a well-organized nation the choice is quickly made. In our country, with vastly greater resources, we attempt to compromise and fail miserably in every direction.

One of the lessons that we must learn, and it is hoped that we may learn it without the bitter experience of war, is that in times of emergency private interest and convenience must invariably

give way to the needs of the nation, and this is most true in the matter of our railroads in time of war or when war is imminent.

With regard to our postal system, the same conditions resulted from the mobilization as in the case of the railroads. The call was issued, and with the call everybody seemed inspired to write to everyone else. The mails were crowded, and the Post Office Department found itself obliged to delay all except first-class mail until the first rush was over.[1]

The telegraph offices were likewise affected. Instead of an hour or two being necessary to send a telegram from one of our large cities to another, the time increased seven or eight-fold. So many telegrams were sent that the system failed for the time being. Military telegrams took their places in the line, and important matters with regard to equipment were thus delayed and the mobilization further retarded. What would result were we confronted by a real and serious war?

Proper organization of these resources would have prevented such delay, as proper preparedness would probably prevent war. A censorship of telegraph service would have held back purely personal telegrams until the necessary public

[1] Much annoyance and some delay in mobilization was due to slow delivery of large sacks of blank forms for military administration, "printed matter" receiving consideration only after "first-class mail."

business had been transacted. As before, the individual must give way to the public need when emergency arises.

To sum up, we are possessed of superb resources in supplies, the means of transporting them, and in communications, but as with our resources in men, we have not learned to organize them.

Our Americanism has taught us that the protection of the individual and his rights are of first importance. Our individualism may, however, be at times a menace to the common weal.

We have yet to learn and to realize fully that the best protection of the individual is in the collective action of the whole people, represented by their government, and that when this collective action becomes necessary, all else must give way before it. Otherwise, we must expect confusion, congestion, delay, and in the end disaster.

III

The Regular Army

THE National Defense Act, approved on June 3, 1916, provides—

> that the army of the United States shall consist of the regular army, the volunteer army, the Officers' Reserve Corps, the Enlisted Reserve Corps, the National Guard while in the service of the United States, and such other land forces as are now or may hereafter be authorized by law.

The regular army is the peace nucleus of the greater war army of the nation. Its strength and organization should be determined not only by its relation to the larger force, but by its own peace and war functions. It must be prepared at all times to meet sudden and special emergencies, which cannot be met by the army of citizen soldiers. Its units must be the models for the organization and training of those of the great war army.

Some of the functions of the regular army are:

(*a*) To furnish the entire strength of our garrisons outside of the United States proper both in peace and war.

(*b*) To garrison our harbor defenses within the United States proper in time of peace.

(*c*) To furnish detachments of mobile forces in time of peace sufficent for the protection of these harbor defenses and naval bases against naval raids which, under modern conditions, may precede a declaration of war.

(*d*) To furnish sufficient mobile forces to protect our principal cities by preventing the landing of hostile expeditions for their capture in the intervals between our fortified harbors or near such cities.

(*e*) To supply a mobile reserve to reenforce our garrisons outside of the United States proper during periods of insurrection and disorder.

(*f*) To furnish expeditionary forces for minor wars resulting from the occupation of foreign territory where treaty rights or fundamental national policies may have been threatened.

(*g*) To prepare in advance its existing administrative and supply departments for the equipment, transportation, and supply of the great war army of the nation.

(*h*) To assist in the training of organizations of citizen soldiers.

Concerning the strength and organization of the regular army, the following points are to be considered:

(*a*) At the outbreak of war the regular army at home should be strong enough, with the addition of organized and trained citizen soldiers, to form the first line of defense in order to give sufficient time to permit the mobilization and concentration of our greater war army, and to seize opportunities for such immediate initial operations as may be undertaken before the mobilization of the army of citizen soldiers can be completed.

(*b*) It should be so organized and located that it can be economically and efficiently trained, quickly and easily mobilized and concentrated, and readily used as

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a model in the education and training of the citizen forces.

Prior to the passage of the National Defense Act the strength and constitution of the regular army were as set forth in the following table:

	Commissioned officers	Enlisted men
General officers	24	....
Adjutant General's Department	23	....
Inspector General's Department	17	....
Judge Advocate General's Department	13	....
Quartermaster Corps	183	[1] 403
Medical Department	[2] 601	([3])
Corps of Engineers	249	1,942
Ordnance Department	85	765
Signal Corps	106	1,472
Bureau of Insular Affairs	3	....
Fifteen regiments of cavalry	765	14,148
Six regiments of field artillery	252	5,535
Coast Artillery Corps	715	19,019
Thirty regiments of infantry	1,530	35,339
Porto Rico regiment of infantry	32	599
Military academy	7	632
Detached officers	200	....
Additional officers	27	....
Recruiting parties, recruit depots, and unassigned recruits	....	6,098
Service-school detachments	....	746
United States Disciplinary Barracks Guards	....	350
With disciplinary organizations	....	110
Mounted orderlies	....	7
Indian scouts	....	75
Total regular army	4,832	87,240
Additional force:		
Philippine Scouts	182	5,733
Grand total	5,014	92,973

[1] Under the act of Congress approved August 24, 1912, the 6,000 authorized enlisted men of the Quartermaster Corps are not to be counted as part of the strength of the army.

[2] Includes 97 first lieutenants of the Medical Reserve Corps on active duty and 60 dental surgeons.

[3] Under the act of Congress approved March 1, 1887 (24 Stat. L., 435), the enlisted men of the Medical Department (Hospital Corps) are not to be counted as part of the strength of the army. The authorized strength of the Hospital Corps is 4,012 enlisted men.

The Regular Army

The Act provides that—

the regular army of the United States, including the existing organizations, shall consist of sixty-four regiments of infantry, twenty-five regiments of cavalry, twenty-one regiments of field artillery, a Coast Artillery Corps, the brigade, division, army corps, and army headquarters, with their detachments and troops, a General Staff Corps, an Adjutant General's Department, an Inspector General's Department, a Judge Advocate General's Department, a Quartermaster Corps, a Medical Department, a Corps of Engineers, an Ordnance Department, a Signal Corps, the officers of the Bureau of Insular Affairs, the Militia Bureau, the detached officers, the detached noncommissioned officers, the chaplains, the regular army reserve, all organized as hereinafter provided, and the following as now authorized by law: The officers and enlisted men on the retired list; the additional officers; the professors, the Corps of Cadets, the general army service detachment, and detachments of cavalry, field artillery, and engineers, and the band of the United States Military Academy; the post noncommissioned staff officers; the recruiting parties, the recruit depot detachments, and unassigned recruits; the service school detachments; the disciplinary guards; the disciplinary organizations; the Indian Scouts; and such other officers and enlisted men as are now or may be hereafter provided for: *Provided,* That hereafter the enlisted personnel of all organizations of the regular army shall at all times be maintained at a strength not below the minimum strength fixed by law: *Provided further,* That the total enlisted force of the line of the regular army, excluding the Philippine Scouts and the enlisted men of the Quartermaster Corps, of the Medical Department, and of the Signal Corps, and the unassigned recruits, shall not at any one time, except in the event of actual or threatened war or similar emergency in which the public safety demands it, exceed one hundred and seventy-five thousand men.

The increase is to be made in five nearly equal increments, the last of which will take effect on July 1, 1920, unless some unforeseen contingency or great national emergency should require that the entire increase be completed at an earlier date. The table on page 73 shows what the minimum and maximum strength will be after the final increment shall have been made. The strength shown can be approximate only as some of the items are discretionary and dependent upon the needs of the service, but they have been approximated as far as those needs can now be foreseen. Between the indicated limits the strength may be varied at the discretion of the President, provided that the limit of the enlisted strength of the line of the army[1] does not exceed 175,000 men without the express sanction of Congress.

General Organization

The President of the United States is the commander in chief of the army under the constitution, but in the actual administration of military affairs he has rarely exercised the functions of personal command. His actual control of the military branch of the government has usually been limited to indicating the objects to be accomplished, and to directing its employment for their attainment.

[1] The line of the army consists of the infantry, cavalry, field artillery, and engineer regiments, the coast artillery, and some small detachments at brigade, division, and other headquarters.

The Regular Army

ESTIMATED AUTHORIZED STRENGTH OF THE ARMY

ON COMPLETION OF THE FIVE INCREMENTS PROVIDED FOR BY THE NATIONAL DEFENSE ACT

	Minimum		Maximum	
	Officers	Enlisted men	Officers	Enlisted men
General officers of the line [1]	44	.....	44	.....
General Staff	52	.....	52	.....
Adjutant General's Department	51	.....	51	.....
Inspector General's Department	29	.....	29	.....
Judge Advocate General's Department	32	.....	32	.....
Quartermaster Corps [4]	296	10,000	296	20,000
Medical Department [2] [4]	1,800	10,000	2,422	15,000
Corps of Engineers [3]	505	5,384	505	7,578
Ordnance Department [4]	142	2,000	142	2,000
Signal Corps: Signal Corps	127	3,500	127	3,500
Signal Corps: Aviation Section	148		148	
Bureau of Insular Affairs	3	.....	3	.....
Chaplains	141	.....	141	.....
Sixty-four regiments of infantry	3,415	86,272	3,415	126,016
Twenty-five regiments of cavalry	1,300	25,275	1,300	37,175
Twenty-one regiments of field artillery	876	18,232	876	26,741
Coast Artillery Corps	1,201	30,018	1,201	30,018
Porto Rico Regiment of Infantry	51	1,348	51	1,969
Military Academy	7	632	7	632
Detached officers	1,022	.....	1,022	.....
Recruiting parties, recruit depots, and unassigned recruits [4]	.....	15,000	.....	15,000
Service School detachments	.....	746	.....	746
U. S. Disciplinary Barracks Guard	.....	350	.....	350
With disciplinary organizations	.....	110	.....	110
Division and brigade headquarters troops and detachments [4]	.....	1,350	.....	1,350
Total estimated strength	11,242	210,217	11,864	288,185

[1] Includes the Chief of Staff and two assistants.

[2] The Medical Department includes the Medical Corps, the Dental Corps, the Veterinary Corps, the Nurse Corps, and the enlisted force. The number of medical officers authorized is seven per thousand of the enlisted strength (dentists in addition at one per thousand), and the enlisted force authorized is 5 per cent of the enlisted strength of the army.

[3] Includes seven regiments and two mounted battalions of engineers.

[4] Purely an estimate.

NOTE: The estimated strength above shown can be only approximate; many of the organizations are discretionary with the President, and the numbers that will be employed will depend upon the needs of the service as dictated by experience.

The active functions of command reside in the Secretary of War, who in this respect is by law the representative of the President; his orders and instructions have the full force and effect of those of the chief executive, and he is in fact the real commander in chief.

He exercises this command through the Chief of Staff, the department commanders, and the various staff departments and bureaus.

For the purpose of the administration and command of the regular army in time of peace the whole area of the United States and its dependencies is divided into geographical departments, each under the command of a general officer, who is the immediate commander of all the troops serving within the limits of his department.

These departments at the present time are as follows:

The Eastern Department:[1] Embracing the New England States, New York, New Jersey, Pennsylvania, Delaware, Maryland, District of Columbia, Virginia, West Virginia, North Carolina, South Carolina, Kentucky, Tennessee, Georgia, Florida, Alabama, Mississippi, the post of Fort Logan H. Roots, Arkansas, the coast defenses of New Orleans and Galveston, the

[1] Recent orders divide this department into three. The order is not effective at the date this goes to press.

Panama Canal Zone, the island of Porto Rico with the islands and keys adjacent thereto, and the Danish West Indies recently purchased; headquarters, Governors Island, N. Y.

The Central Department: Embracing the States of Ohio, Michigan, Indiana, Illinois, Wisconsin, Minnesota, North Dakota, South Dakota, Iowa, Missouri, Kansas, Nebraska, Wyoming (except that part included in the Yellowstone Park), Colorado, and the post of Fort Missoula, Mont.; headquarters, Chicago, Ill.

The Southern Department: Embracing the States of Texas (except the coast defenses of Galveston), Louisiana (except the coast defenses of New Orleans), Arkansas (except the post of Fort Logan H. Roots), Oklahoma, New Mexico, and Arizona; headquarters, Fort Sam Houston, Tex.

The Western Department: Embracing the States of Washington, Oregon, Idaho, Montana (except the post of Fort Missoula), so much of Wyoming as includes Yellowstone Park, California, Nevada, Utah, and Alaska; headquarters, San Francisco, Cal.

The Philippine Department: Embracing all the islands of the Philippine Archipelago; headquarters, Manila, P. I.

The Hawaiian Department: Embracing the Hawaiian Islands and their dependencies; headquarters, Honolulu, Hawaii.

The General Staff

After the war with Spain in 1898 the conduct of the operations was investigated by a committee of the Senate, and in its report was included the following statement:

> In the judgment of the commission there was lacking in the general administration of the War Department during the continuance of the war with Spain that complete grasp of the situation which was essential to the highest efficiency and discipline of the army. (P. 116, S. Doc. No. 221, 56th Cong., 1st sess.)

A study of our military history indicates that this essential coordination has been lacking in all our wars. To remedy the defect, study was made of the military systems of well-organized foreign military establishments, and the necessity for a superior coordinating body being apparent, Congress, in 1903, supplied the defect by providing for the organization of the General Staff.

Its duties were prescribed to be to prepare plans for the national defense and for the mobilization of the military forces in time of war; to investigate and report upon all questions affecting the efficiency of the army and its state of prepa-

ration for military operations; to render professional aid and assistance to the Secretary of War and to general officers, and to act as their agents in informing and coordinating the action of all the different officers who are subject to the supervision of the Chief of Staff; and to perform such other military duties not otherwise assigned by law as may be from time to time prescribed by the President.

The Chief of Staff was given the supervision of the troops of the line and of the staff departments and bureaus, in addition to various duties which had formerly been performed by the commanding general of the army.[1]

For the purpose of fulfilling the functions that have been assigned to them by law, the officers of the General Staff serving in the War Department are divided into sections and committees, which study the problems presented to them, rendering reports to the Chief of Staff for the action of the Secretary of War. The War College Division and the Army War College, also situated in Washington, are likewise engaged in the solution of military problems affecting the efficiency and the utilization of the forces, and in coordinating the efforts of the several staff departments and bureaus, with a view to produc-

[1] This title was a misnomer. As stated by the author, the Secretary of War really commands in peace. There were many instances of orders being issued under authority of the commanding general of which he had no knowledge.

ing the teamwork which is the *sine qua non* of a military institution.

A number of officers of the General Staff are assigned to duty at the headquarters of the several departments and tactical divisions. They are the special advisers of the commanders under whose orders they serve, their duties being similar to those described above in relation to coordination and efficiency.

Under the recent National Defense Act, the General Staff will consist of the Chief of Staff, a major general, two assistants to the Chief of Staff, general officers of the line, one of whom is president of the Army War College, and fifty-two other officers, from the grade of colonel to that of captain, inclusive. Of these but 50 per cent may serve at one time in or near the District of Columbia, and no General Staff officer may be ordered, or even permitted, to perform duty of an administrative nature that pertains to the established bureaus or offices of the War Department.

The Staff Departments

The staff departments and bureaus of the War Department include the following:

The Adjutant General's Department; the Inspector General's Department; the Judge Advocate General's Department; the Quartermaster Corps; the Medical Department; the Corps of

Engineers; the Ordnance Department; the Signal Corps; the Militia Bureau.

The Bureau of Insular Affairs may also be included, but as its functions are confined to the civil administration of certain of our insular dependencies, it is in effect a civil bureau, and not an essential part of our military system.

The Adjutant General's Department: The Adjutant General's Department is the department of records, orders, and correspondence of the army and the militia.

The adjutant general is charged, under the direction of the Secretary of War, and subject to the supervision of the Chief of Staff in all matters pertaining to the command, discipline, or administration of the existing military establishment, with the duty of recording, authenticating, and communicating to troops and individuals in the military service all orders, instructions, and regulations issued by the Secretary of War through the Chief of Staff; of preparing and distributing commissions; of compiling and issuing the Army Register and the Army List and Directory; of consolidating the general returns of the army; of arranging and preserving the reports of officers detailed to visit encampments of militia; of preparing the annual returns of the militia required by law to be submitted to Congress; of managing the recruiting service, and of recording and issuing orders from the War Department remitting or mitigating sentences of general prisoners who have been discharged from the military service.

The adjutant general is vested by law with the charge, under the Secretary of War, "of the military and hospital records of the volunteer armies and the pension and other business of the War Department connected

therewith"; and of the publication and distribution of the Official Records of the War of the Rebellion. He also has charge of the historical records and business of the permanent military establishment, including all pension, pay, bounty, and other business pertaining to or based upon the military or medical histories of former officers or enlisted men.

Under the National Defense Act the department will consist of The Adjutant General and fifty other officers of the grades of colonel, lieutenant colonel, and major. Part of these officers serve in the War Department, the remainder being distributed as department adjutants, and adjutants of divisions and brigades.

There are no enlisted men in this department, the working force consisting of a large number of civilian clerks.

The Inspector General's Department: This department attends to the formal administrative inspections of all the organizations of which the army is composed, including the line of the army and the staff departments.

Its sphere of inquiry includes every branch of military affairs except when specially limited in regulations or in orders. Inspectors general and acting inspectors general exercise a comprehensive and general observation within the command to which they may be respectively assigned over all that pertains to the efficiency of the army, the condition and state of supplies of all kinds, of arms and equipments, of the expenditure of public property and moneys, and the condition of accounts of all disbursing officers of every branch of the

service, of the conduct, discipline, and efficiency of officers and troops, and report with strict impartiality in regard to all irregularities that may be discovered. From time to time they make such suggestions as may appear to them practicable for the correction of any defect that may come under their observation.

The department as now constituted will consist of the inspector general and twenty-eight other officers of the grades of colonel, lieutenant colonel, and major.

The Judge Advocate General's Department: The Judge Advocate General's Department is the legal bureau of the War Department, and the officers thereof are required by the nature of their duties to be well versed in both the civil and military codes and procedure, as well as in the rules of international law as they apply to the military service and to land warfare.

The judge advocate general is the custodian of the records of all general courts-martial, courts of inquiry, and military commissions, and of all papers relating to the title of lands under the control of the War Department, except the Washington Aqueduct and the public buildings and grounds in the District of Columbia. The officers of this department render opinions upon legal questions when called upon by proper authority.

The department will consist, under existing law, of the judge advocate general and thirty-one other officers of grades from colonel to major inclusive.

The Quartermaster Corps: This is the principal supply bureau of the War Department.

It is charged with the duty of providing means of transportation of every character, either under contract or in kind, which may be needed in the movement of troops and material of war. It furnishes all public animals employed in the service of the army, the forage consumed by them, wagons and all articles necessary for their use. It furnishes clothing, camp and garrison equipage, barracks, storehouses, and other buildings; constructs and repairs roads, railways, bridges; builds and charters ships, boats, docks, and wharves needed for military purposes; supplies subsistence for enlisted men and others entitled thereto; supplies articles for authorized sales and issues; furnishes lists of articles authorized to be kept for sale; gives instructions for procuring, distributing, issuing, selling, and accounting for all quartermaster and subsistence supplies; has charge of the supply and distribution of and accounting for funds for the payment of the army, and such other financial duties as are specially assigned to it; and attends to all matters connected with military operations which are not expressly assigned to some other bureau of the War Department.

In addition, the Quartermaster Corps will supply a large proportion of the officers and men of the trains of the tactical divisions, army corps, and armies in the field, and will be charged in war with the general supply of the troops in campaign, with the exception of arms, ammunition, engineer, signal, aeronautical, and medical supplies. Its organization must therefore be so adjusted as to enable it to cooperate with the industries of the country.

It will consist, under the reorganization, of the quartermaster general, a major general, two assistants, brigadier generals, and two hundred and ninety-three officers of all grades, from colonel to captain, inclusive.

The enlisted force is not limited by law, except as to the proportion in each grade, and the total number is prescribed by the President in accord with the needs of the army. The present force is somewhat below 8,000 men, but this number will be materially increased as the successive increments provided by the law for the regular army are added.

The Medical Department:

The Medical Department is charged with the duty of investigating the sanitary condition of the army and making recommendations in reference thereto, of advising with reference to the location of permanent camps and posts, the adoption of systems of water supply and purification, and the disposal of wastes, with the duty of caring for the sick and wounded, making physical examinations of officers and enlisted men, the management and control of military hospitals, and furnishing all medical and hospital supplies.

The department as now constituted by law comprises the Medical Corps (the commissioned medical officers of the army), the Dental Corps, the Veterinary Corps, the Nurse Corps, and the enlisted force; the recruitment, instruction, and

control of all these elements is vested in the department.

The Medical Department furnishes the personnel of all military hospitals, both in the field and in garrison, ambulance companies, and other service connected with the health of troops at all times.

In war it must adjust itself to care for both wounded and sick, removing the former from the battle field and taking charge of them until they are discharged for disability or returned to their organizations.

With it will cooperate the National Red Cross Society, which has the official recognition of the government, and which will render assistance in war at all points in rear of the base hospitals of the theater of war.

The number of officers and enlisted men of the Medical Department is not fixed, the law providing that there shall be seven medical officers and one dentist for each thousand enlisted men of the authorized strength of the army, while the enlisted force shall be 5 per cent of that total strength.

The estimated numbers of officers and men is approximately 1,800 officers and 15,000 men for the minimum and 2,400 officers and 20,000 men for the maximum strength of the army after the entire increase now provided shall have been made.

The Corps of Engineers:

The duties of the Corps of Engineers comprise reconnoitering and surveying for military purposes, including the laying out of camps; selection of sites and formation of plans and estimates for military defenses; construction and repair of fortifications and their accessories; the supervision of the location of all buildings in or within one mile of any fortification; the installation of electric power plants and electric power cable connected with seacoast batteries, and furnishing the necessary electrical supplies connected therewith; planning and superintending of defensive or offensive works of troops in the field; examination of routes of communications for supplies and for military movements; construction and repair of military roads, railroads, and bridges; military demolitions; execution of river and harbor improvements assigned to it; and such other duties as the President or Congress may order. It collects, arranges, and preserves all correspondence, reports, memoirs, estimates, plans, drawings, such deeds and titles as relate to the Washington Aqueduct and public buildings and grounds in the District of Columbia, and models which concern or relate in any wise to the several duties above enumerated.

It will be seen from the above that the functions of the corps are partly civil and partly military. This should accrue to the advantage of the military engineer in our service, as his civil training will tend to keep him in touch with the most modern methods of construction, while his service with troops will prepare him for the peculiar emergencies that arise in the military profession, and which engineering skill can best meet with the expectation of success.

The Corps of Engineers will in future consist of the chief of engineers, a brigadier general, and five hundred and four officers of all grades from colonel to second lieutenant. More than half of these officers are engaged in civil work, such as the improvement of rivers and harbors, lighthouse duty, etc.

The troops of the corps consist of seven regiments and two mounted battalions, one regiment for each of the seven infantry divisions, and one mounted battalion for each of the two cavalry divisions. In these regiments and battalions will serve two hundred and thirty-six officers, somewhat less than half the corps. The division of the corps into two sections for civil and military duty, with a proper rotation from one to the other, should assure the all-round training of our engineer officers, and secure the highest efficiency.

The Ordnance Department:

The chief of ordnance is charged with the duty of procuring, by purchase or manufacture, and distributing the necessary ordnance and ordnance stores for the regular army and the National Guard, and establishes and maintains arsenals and depots for their manufacture and safe-keeping.

Ordnance and ordnance stores include cannon and artillery vehicles and equipments; apparatus and machines for the service and maneuver of artillery; small arms, ammunition, and accouterments; horse equipments for the field artillery and horse equipment for cavalry and other mounted men and tools, machinery, and materials for the ordnance service.

With the organization of our industries under the National Defense Act, it will doubtless be the function of the Ordnance Department to furnish the necessary fittings to convert our factories to munition plants, and to supervise the working of these plants in the production of arms and ammunition, as well as the other ordnance stores necessary for troops in campaign. Moreover, when, under the provisions of the act, a manufacturer refuses to give preference to the government, or declines to sell his products to the United States, or to convert his factory to the production of munitions in the interest of the nation, it will fall to the lot of this department to occupy, prepare, and work such plant in the interest of the military service, under the direction of the Secretary of War.

The functions of this department, which is charged with supplying munitions to the army, is paramount in war, as exemplified by the munitions question in the present European war, and this department should be so organized as to admit of immediate expansion on the outbreak of hostilities to the extent necessary to keep our forces adequately supplied at all times with all kinds of arms and ammunition.

It will consist, under the new law, of the chief of ordnance, a brigadier general, and one hundred and forty-two officers. The enlisted force of the department will depend upon the needs of

the service, and at the present time numbers about 1,250 men.

The Signal Corps: The Signal Corps consists of the chief signal officer, the Signal Corps proper, and the Aviation Section.

The chief signal officer has charge, under the direction of the Secretary of War, of all military signal duties and of books, papers, and devices connected therewith, including telegraph and telephone apparatus and the necessary meteorological instruments for use on target ranges and for other military uses; of the construction, repair, and operation of military telegraph lines and the duty of collecting and transmitting information for the army, by telegraph or otherwise, and of all other duties usually pertaining to military signaling and the operations of such corps as shall be confined to strictly military matters; of the direction of the Signal Corps of the army and the control of the officers, enlisted men, and employees attached thereto; of the supply, installation, repair, and operation of military cables, telegraph and telephone lines, and radio apparatus and stations; of the supply, repair, and operation of field telegraph trains and balloon trains; of the preparation, distribution, and revision of the War Department telegraphic code; of the supervision of such instruction in military signaling, telephony, and telegraphy as may be prescribed in orders from the War Department, except such as is used by the coast artillery in fire control and fire direction and service of submarine mines; of the procurement, preservation, and distribution of the necessary supplies for the Signal Corps and of the procurement and issue of signal equipment required in coast defenses.

The Signal Corps proper will consist of one hundred and twenty-seven officers and an enlisted

force. This corps furnishes the field battalions, with their telegraph, telephone, and radio communication, to the tactical divisions, and is charged with the maintenance of the communications of our mobile forces in campaign.

The Aviation Section is our flying corps, and consists of one hundred and forty-eight officers. It will be organized into aero squadrons for field service.

Both of these divisions of the Signal Corps will have an adequate enlisted force, which, for the seven infantry divisions and two cavalry divisions into which it is proposed to organize the regular army, will number in the neighborhood of 3,500 men.

The Militia Bureau: Prior to the passage of the National Defense Act, militia affairs were in the hands of the National Militia Board, established in 1908, and were administered through the Militia Division of the General Staff Board. The new law abolished the National Militia Board, and changed the designation of the Militia Division to that of Militia Bureau, constituting the latter as one of the established bureaus of the War Department.

The Militia Bureau is in charge of all matters relating to the militia, which is defined by the law to include all able-bodied citizens of the United States, or aliens who have declared their

intention to become citizens, between the ages of eighteen and forty-five years, and is divided into three classes: the National Guard, the Naval Militia, and the Unorganized Militia. The act is made applicable to the land forces only, therefore the Naval Militia is excluded as not forming part thereof, and is not under the direction of the bureau.

The number of officers who shall serve in the Militia Bureau is not specified, and will depend upon the requirements of the service. One unusual circumstance, however, is that the President may assign to duty in this bureau one colonel and one lieutenant colonel of the National Guard.

The Detailed Staff System

Only part of the officers of the staff corps and departments belong permanently to these bodies.

Prior to 1901 they were permanent in their corps. The staff officer was permanently detached from the troops. Immured in a departmental office, he lost touch with the line of the army, which it was his principal function to serve. On the other hand, the line officer spent most of his time with the troops, had little, if any, opportunity to gain experience in staff duty, and was consequently poorly equipped for the wider range of duties which necessarily fell to his lot at the outbreak of war. The consequence was a failure of

coordination and cooperation between the staff and the line, which was one of the reasons for the fiasco in the administrative and supply service in the Spanish-American War.

On the reorganization of the army after the war, it was provided that no further permanent appointments should be made in the Adjutant General's and Inspector General's Departments, the Quartermaster Corps, the Ordnance Department, and the Signal Corps, and that all vacancies that should subsequently occur in these departments should be filled by the detail of infantry, cavalry, or artillery officers for periods not exceeding four years.

As the permanent staff officers have gradually dropped out of service through retirement, death, or otherwise, their places have been thus filled, with the result that at the present time the majority of the officers of these departments are line officers, accustomed to both staff duty and service with troops.

The system has been successful. Through it a large number of line officers have been given a thorough all-round training, which fits them for the many and varied duties that will fall to them in time of war, and a strong bond of sympathy and coordination has been established between the staff and the line, which has tended to a better understanding of the needs of the troops and of the methods of supplying them.

Recruiting

Recruiting in the regular army is under the direction of the adjutant general of the army. It is conducted by—

1. An officer for each regiment, post, or detachment, detailed by the proper commanding officer to enlist for the regiment, post, or detachment, or, when authorized by the department commander, for any troops in the department, or, when authorized by the War Department, for any organization in the army.
2. An officer detached from any organization by its commander, with the approval of the War Department, to make enlistments for that organization and when authorized by the War Department, for any organization in the army.

The principal source of recruits, however, is the general recruiting service, whose stations and depots are distributed throughout the United States, with principal stations in all the larger cities, and subsidiary ones in the towns.

General recruiting stations are places at which applicants for enlistment are examined and from which, if found to be qualified for service, they are forwarded to recruiting depots for final examination and enlistment.

Recruiting depots are of two classes, viz., general recruit depots and recruit depot posts. General recruit depots are depots at which applicants for enlistment are finally examined, enlisted, and retained for instruction, and from which recruits are distributed to the army. Recruit depot posts are the designated military posts to which are sent, from general recruiting stations, for final examination, enlistment, and distribution to the army, such applicants for enlistment as are not sent to general recruit depots.

At all of these stations are kept one or more officers and a number of carefully selected enlisted men of the general recruiting service, who are employed in the reception and examination of applicants for enlistment, and their care until they are forwarded to one of the recruit depots.

All enlistment in the regular army is voluntary. This fact is often lost sight of by detractors of the army, who like to compare our regular army to a horde of mercenaries, forgetting that, for the love of the service and motives of patriotism, the enlisted soldier voluntarily subjects himself to severe discipline and arduous service for a wage that is always below that which he can easily obtain in the labor markets of civil life.

The requirements that must be fulfilled by applicants for enlistment are as follows:

> Any male citizen of the United States or person who has legally declared his intention to become a citizen, if above the age of eighteen and under the age of thirty-five years, able-bodied, free from disease, of good character and temperate habits, may be enlisted or accepted for enlistment under the restrictions contained in this article. In regard to age or citizenship this regulation does not apply to soldiers who have served honestly and faithfully a previous enlistment in the army.

An applicant at a recruiting station is carefully examined, mentally, physically, and morally by the recruiting officer, and, if he is found to be a suitable man for the military service, he is

accepted and forwarded to a recruit depot, where he is held under observation, and if, after final examination, he is found qualified, the nature of the service and the period of enlistment are explained to him, and he is required to sign the following declaration before being finally accepted for the army:

I, John Doe, desiring to —enlist in the army of the United States for the term of seven years, do declare that I have neither wife nor child; that I am of the legal age to enlist, and believe myself to be physically qualified to perform the duties of an able-bodied soldier; and I do further declare that I am of good habits and character in all respects and have never been discharged from the United States service (army or navy) or any other service on account of disability or through sentence of either a civil or military court, nor discharged from any service, civil or military, except with good character, and for the reasons given by me to the recruiting officer prior to this enlistment. [Here add, in case of an applicant for first enlistment: And that I am, or have made legal declaration of my intention to become, a citizen of the United States.]

Given at New York, this 1st day of October, 1916.

JOHN DOE.

Witnesses:
JAMES SMYTH.
ROLAND BROWN.

If the applicant be under the legal age of eighteen years, he must furnish the written consent of his parents or guardian, as follows:

I, Thomas Doe, do certify that I am the father of John Doe; that the said John Doe is 17 years of age; and I do hereby freely give my consent to his enlisting

as a soldier in the army of the United States for the period of seven years in active service and in the army reserve for the periods and under the conditions prescribed by law.

Given at New York, this 1st day of October, 1916.

THOMAS DOE.

Witness:
JAMES SMITH.

If he be without parents or guardian, the applicant will be rejected unless he take the necessary steps to provide himself with a legal guardian, and to obtain his written consent.

The formalities of determining the eligibility of the applicant having been satisfactorily gone through with, he is finally accepted and takes the oath of enlistment, after which he is duly a soldier in the service of the United States. He then enters upon his preliminary training at the recruit depot. The recruits are usually organized for instruction into companies, and are thoroughly trained in the elementary drill of the soldier, and instructed in their duties and obligations.

From the recruit depots, the recruits are distributed to the army as they are needed and called for by the various organizations.

To assist the War Department in obtaining recruits the President may, under the National Defense Act, utilize the services of postmasters of the second, third, and fourth classes in procuring enlistments for the army. For each man thus secured and accepted, the postmaster will

receive the sum of five dollars. This provision is an innovation from which much is hoped, as the postmasters of small towns are in intimate touch with the people, and it is believed that their assistance may prove of great value in procuring proper men for the military arm of the government.

The Enlistment Contract

The contract that is sworn and subscribed to by each soldier of the regular army is here set forth:

State of ——,
City, town, or military post ——. } *ss:*

I, —— ——, born in ——, in the State of ——, aged —— years and —— months, and by occupation a ——, do hereby acknowledge to have voluntarily —enlisted this —— day of ——, 191—, as a soldier in the army of the United States of America, for the period of seven years in active service and in the Army Reserve for the periods and under the conditions prescribed by law, unless sooner discharged by proper authority; and do also agree to accept from the United States such bounty, pay, rations, and clothing as are or may be established by law. And I do solemnly swear (or affirm) that I will bear true faith and allegiance to the United States of America; that I will serve them honestly and faithfully against all their enemies whomsoever; and that I will obey the orders of the President of the United States, and the orders of the officers appointed over me, according to the Rules and Articles of War.

[SEAL] —— ——

Subscribed and duly sworn to before me this —— day of ——, A. D. 191—. —— ——,

Recruiting Officer.

Under the present law the engagement is for seven years, the first three to be in active service in the organization for which the soldier is enlisted, and the remainder in the regular army reserve.

However, a soldier who desires to continue in active service may receive his final discharge at the end of three years and immediately enter upon a new enlistment period of seven years. On the other hand, one who does not wish to remain may, if he demonstrates that he is proficient and sufficiently trained, be furloughed to the reserve at the expiration of one year of service.

While in the regular army reserve a soldier still receives pay from the government at the rate of $24 per year, payable semiannually, which amount serves as a retainer to avoid the loss of the trained and disciplined man. This reserve will be considered later as one of the elements of army organization.

The Mobile and Coast Artillery Troops

Experience has shown that our army must consist of two distinct classes of troops—that is, *mobile troops* and *coast artillery troops*. Broadly speaking, the principal function of our mobile troops is to oppose an *invading army*, while that of our coast artillery is to oppose *direct naval attacks*.

Mobile Troops

The best defense can be accomplished only by the ability to resort to offensive operations. Our mobile troops are organized on the basis of being able to resort to offensive as well as defensive operations. Some of the functions of the mobile troops are:

(*a*) To furnish detachments of mobile forces sufficient for the protection of harbor defenses and naval bases against landing parties during naval raids which, under modern conditions, may precede a declaration of war.

(*b*) To oppose an invading army and to operate in any possible theater of war.

(*c*) To furnish adequate mobile forces to protect our principal cities by preventing the landing of hostile expeditions for their capture in the intervals between our fortified harbors or near such cities.

The only reasonable way in which these localities not covered by fixed defenses can be defended is:

(1) By providing a mobile land force of sufficient strength, so located that it may be thrown in at threatened points at the proper time.

(2) By supplying in addition modern movable coast defense armament of heavy types to resist the direct naval attack of the covering fleet.

Our mobile troops consist of the regiments of infantry, cavalry, field artillery, and engineers, the mounted battalions of engineers destined to

accompany cavalry, the field signal battalions, and the aero squadrons, with the necessary headquarters and trains to complete their organization for service in the field.

The organization of the various elements of the mobile army is shown in the accompanying tables (pp. 100, 101) in the minimum strength prescribed for normal or peace conditions, and the maximum to which they would be raised immediately upon the outbreak of war by the addition of reservists from the regular army reserve or of recruits.

Field Artillery

The field artillery is organized into regiments of light, mountain, horse, and heavy artillery.

Light artillery is that which usually accompanies infantry in the field. The guns and caissons are drawn by six-horse teams with mounted drivers, while the cannoneers are seated on the ammunition chests of the caissons. In our service the light artillery is armed with either the 3-inch field gun, which fires a 15-pound projectile, or with the 3.8-inch howitzer, firing a 30-pound projectile. In each division there is a brigade of three regiments, two regiments of 3-inch guns and one regiment of 3.8-inch howitzers.

Mountain artillery is used with troops operating in difficult country where it is impossible for wheeled vehicles to be taken. The guns and

INFANTRY

		Officers	Enlisted men	Rifles	Commander
A company	Minimum	3	100	97	Captain
	Maximum		150	147	
A battalion (four companies)	Minimum	14	400	388	Major
	Maximum		600	588	
A regiment (Headquarters; Headquarters company; Supply company; Machine-gun company[1]; Three battalions)	Minimum	51	1,348	1,272	Colonel
	Maximum		1,969	1,793	
A brigade (Headquarters; Three regiments)	Minimum	157	4,057	3,829	Brigadier general
	Maximum		5,920	5,392	

[1] Each regiment has a machine-gun company with six machine guns.

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CAVALRY

		Officers	Enlisted men	Rifles	Commander
A troop	Minimum	3	70	68	Captain
	Maximum		105	103	
A squadron (four troops)	Minimum	14	280	272	Major
	Maximum		420	412	
A regiment (Headquarters, Headquarters troop, Supply troop, Machine-gun troop [1], Three squadrons)	Minimum	52	1,011	827	Colonel
	Maximum		1,487	1,303	
A brigade (Headquarters, Three regiments)	Minimum	160	3,046	2,494	Brigadier general
	Maximum		4,474	3,922	

[1] Each regiment has a machine-gun troop with six machine guns.

ammunition are carried on pack mules. It has practically the same caliber, 3 inches, as that of the light field gun, but the mountain gun is smaller, and has very much shorter range and lower power than the field gun.

Light artillery and mountain artillery are organized into regiments of two battalions of three batteries each.

Horse artillery is intended to accompany the more rapidly moving cavalry. It uses in our service the same gun as the light artillery, but the cannoneers are mounted on horses and less ammunition is carried; this enables it to travel at a higher rate of speed than the light artillery, and to make longer marches.

Heavy artillery consists of the heavier types of field gun, 4.7-inch gun, 6-inch howitzer, and larger calibers, which belong to the heavy artillery of an army. Heavy artillery is organized into brigades of three regiments, one brigade for each army corps.

Horse and heavy artillery are organized into regiments of three battalions of two batteries each.

The tables on pp. 103-4 show the organization of batteries, battalions, regiments, and brigades.

These mobile units are grouped into the infantry or cavalry division. The division is the smallest all-round unit composed of the proper quota of troops of all arms, and so organized as to

FIELD ARTILLERY

		Officers	Enlisted men	Guns	Commander
A battery	Minimum	5	126	4	Captain
	Maximum		190		
A battalion (three batteries)	Minimum	17	378	12	Major
	Maximum		570		
A battalion (two batteries)	Minimum	12	252	8	Major
	Maximum		380		
A regiment of two battalions (Headquarters; Headquarters company; Supply company [1]; Two battalions)	Minimum	41	842	24	Colonel
	Maximum		1,246		
A regiment of three battalions (Headquarters; Headquarters company; Supply company [2]; Three battalions)	Minimum	44	856	24	Colonel
	Maximum		1,265		
A brigade of light or mountain artillery (Headquarters; Three regiments)	Minimum	127	2,539	72	Brigadier general
	Maximum		3,751		
A brigade of heavy artillery [3] (Headquarters; Three regiments)	Minimum	136	2,581	72	Brigadier general
	Maximum		3,808		

[1] The strength of the supply company is increased by the number of wagoners allowed to the regiment. This number is 21 for a light regiment and 13 for a mountain regiment and is not included in the strength shown. The latter has also 21 packers and assistants.

[2] A horse artillery regiment has 25 and a heavy artillery regiment 21 wagoners, which are not included in the strength shown.

[3] Horse artillery is not organized into brigades, the quota of a cavalry division being one regiment.

ENGINEERS

		Officers	Enlisted men	Commander
A company	Minimum	4	109	Captain
	Maximum		164	
A battalion (Three companies)	Minimum	14	331	Major
	Maximum		499	
A regiment [1] (Headquarters [2] / Two battalions)	Minimum	34	698	Colonel
	Maximum		1,038	
A mounted company	Minimum	4	74	Captain
	Maximum		111	
A mounted battalion [3] (Headquarters [2] / Three companies)	Minimum	16	229	Major
	Maximum		346	

[1] One regiment of engineers with each infantry division.
[2] Wagoners are not included; each regiment will at present have 25, and each mounted battalion 12.
[3] One battalion of mounted engineers with each cavalry division.

SIGNAL CORPS TROOPS

	Officers	Enlisted men	Aeroplanes	Commander
Field signal battalion	13	238	....	Major
Aero squadron	20	129	12	Major

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be able to operate independently. It varies in the different countries in the number and character of its component elements, and in its total strength. Our typical infantry division, which is a very strong one, consists by law of a headquarters, three brigades of infantry, one brigade of field artillery (light), one regiment of cavalry, one regiment of engineers, one field signal battalion, and one aero squadron. Its trains, a necessary organization for supply and sanitary service, consist of a supply train, for the carrying of rations, forage, and other supplies to the troops, an ammunition train for both small arms and artillery ammunition, a sanitary train composed of four ambulance companies and four field hospitals, and an engineer train with extra intrenching tools, a section of pontoon bridge, and a searchlight section. The division is commanded by a major general. The constitution and strength of an infantry division at maximum strength is shown in the table on following page.

A few notes on the division will convey an idea of its magnitude. The daily supply of food for the men and grain for the horses and mules exceeds two hundred thousand pounds, or one hundred tons. The ammunition carried exceeds ten million rifle cartridges, two million pistol cartridges, twenty-two thousand rounds of 3-inch field gun ammunition, and ten thousand rounds of 3.8-inch howitzer ammunition. The length of

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INFANTRY DIVISION AT MAXIMUM (WAR) STRENGTH

	Officers	Enlisted men	Rifles	Guns
Headquarters	27	126	98	..
Three brigades of infantry	516	18,060	16,176	..
One brigade of field artillery	145	3,884	.....	72
One regiment of cavalry	59	1,520	1,303	..
One regiment of engineers	37	1,061	951	..
One field signal battalion	14	244	.....	..
One aero squadron	21	134	.....	..
Divisional trains:				
Supply train				
Ammunition train				
Sanitary train (Four ambulance companies; Four field hospitals)	94	2,190	615	..
Engineer train (tools and pontoon bridge)				
Total	913	27,219	19,143	72

Armament and equipment:

Rifles	19,143
Pistols	9,870
3-inch field guns	48
3.8-inch field howitzers	24
Machine guns	60
Aeroplanes	12

NOTE: Strength in this table includes in each case the quota of officers and enlisted men of the Medical Department, which is not shown in the preceding tables.

road that would normally be occupied by a war-strength division on the march is about twenty miles, and its rate of march is about two miles per hour.

The cavalry division is similarly constituted, but as it is intended for more rapid work than the slowly moving infantry division, and must in consequence be much more flexible, it is necessarily smaller in point of numbers and weaker in fighting power. The typical cavalry division

in our service will consist of three brigades of cavalry, one regiment of horse artillery, one battalion of engineers, one mounted field signal battalion, and one aero squadron, with trains constituted as in an infantry division. It also is commanded by a major general. Its strength and constitution are shown in the table below:

CAVALRY DIVISION AT MAXIMUM (WAR) STRENGTH

	Officers	Enlisted men	Rifles	Guns
Headquarters	27	126	98	..
Three brigades of cavalry	525	13,740	11,766	..
One regiment of horse artillery	49	1,325	.....	24
One battalion of mounted engineers	15	368	321	..
One field signal battalion (mounted)	14	244	.....	..
One aero squadron	21	134	.....	..
Divisional trains: Supply train, Ammunition train, Sanitary train, Engineer train	[1] 60	[1] 1,600	[1] 400	..
Total	711	17,537	12,585	24

[1] Estimated.

Armament and equipment:

Rifles	17,537
Pistols	13,923
3-inch field guns	24
Machine guns	54
Aeroplanes	12

NOTE: Strength in this table includes in each case the quota of officers and enlisted men of the Medical Department, which is not shown in the tables of regiments, battalions, etc.

In time of war, two or more infantry divisions, with one or more cavalry brigades or a cavalry division, a brigade of heavy artillery, and auxiliary troops, may be grouped into an army corps, and an army corps may in like manner

be grouped into armies. These are true war units and will not be maintained in time of peace.

The President has power under the National Defense Act to change or modify the typical division, corps, or army, and may add new and different organizations when the needs of the service require. This progressive clause is of great value in the development of the army. In military matters, as in all others, there is a constant evolution, and an organization that is fixed and invariable may become not only obsolete but even prejudicial in its effects on the efficiency of the military arm of the government.

The strength of the army as provided in the National Defense Act is based upon an organization of seven infantry and two cavalry divisions, with certain troops for special services, with a shortage in the complement of field artillery for the full divisional strength.

The distribution of the regular army proposed by the General Staff is based on the organization of these divisions, and contemplates that it shall be divided into two parts, one for home service and the other for the defense of our oversea dependencies.

For home service the country is divided into strategic areas, and the troops are distributed therein as follows:

Puget Sound area: One division (less divi-

sional cavalry) and one cavalry brigade (of three regiments).

California: One division and one cavalry brigade.

North Atlantic States: One division and one cavalry brigade.

Middle West: One division (less divisional cavalry) and one cavalry brigade.

Mexican border—West of El Paso: One cavalry brigade. East of El Paso: One cavalry brigade.

This would present the distribution of regiments and auxiliary troops within these areas as given in the first table on the next page.

Approximate total strength, 128,000 officers and men.

For oversea service the distribution is as follows:

The Philippines: One division (less divisional cavalry) and one cavalry brigade.

Hawaii (Island of Oahu): One division (less one regiment of artillery).

Panama: One division (less two regiments of artillery).

Alaska: One regiment of infantry.

Porto Rico: One regiment of infantry (the Porto Rican regiment).

This gives the distribution of regiments and auxiliary troops in our dependencies as shown in the second table on the next page.

COMBATANT TROOPS FOR HOME SERVICE

Localities	Infantry regiment	Cavalry regiment	Field artillery regiment	Engineer regiments	Battalions Signal Corps	Aero squadrons
Puget Sound area	9	3	[1] 3½	1⅙	[1] 1½	1
California	9	4	3½	1⅙	1½	1
North Atlantic States	9	4	3½	1⅙	1½	1
Middle West	9	3	3½	1⅙	1½	1
Mexican border	..	6	1	⅓	1	1
Total	36	20	15	5	7	5

[1] Each cavalry brigade to have one battalion horse artillery; one company mounted engineers; one company Signa Corps.

COMBATANT TROOPS FOR DEPENDENCIES

Localities	Regiments of infantry	Regiments of cavalry	Regiments of field artillery	Regiments of engineers	Battalions, Signal Corps[1]	Aero squadrons
Philippines	9	3	3	[2] 1⅙	1½	1
Oahu	9	1	2	1	1½	1
Panama	9	1	1	1	1½	1
Alaska	1	..	..	....	....	..
Porto Rico	[3] 1	..	..	....	....	..
Total	29	5	6	3⅙	4½	3

[1] Includes One telegraph company in each garrison. [2] One company mounted for cavalry brigade. [3] Native.

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The Regular Army

Approximate total strength, 77,000 officers and men.

The Coast Defense Troops

Our coast artillery is primarily organized for defensive operations. Some of its functions are:

(*a*) To prevent naval occupation of important strategic and commercial harbors.
(*b*) To prevent naval bombardment of such cities and military and naval bases as are protected by seacoast fortifications.
(*c*) To furnish a strong, fortified base from which submarines and other naval vessels, acting on the offensive, may operate.
(*d*) To repel a fleet supporting a landing in force within range of the guns of a fortified harbor.
(*e*) To cooperate with the mobile troops in the landward defense of seacoast fortifications.

With the development of modern movable artillery of large caliber and long range, the functions of the coast artillery will be extended to repelling direct naval attack at certain unfortified harbors and favorable landing beaches in the intervals between the present fortified harbors, under the commanders of the mobile forces.

The Coast Artillery Corps was formerly organized with the equivalent in officers and enlisted men of fourteen line regiments. However, it had no regimental organization, the maximum statutory unit being the company.

In the reorganization provided for by the National Defense Act, even the company has

been abolished, it having been found by experience that it was not sufficiently flexible for the needs of the service. The manning of a seacoast battery is in many respects like providing a crew for a ship; the number of officers and men needed depends in each case upon the type and size of the battery and its guns; the submarine mine companies vary with the extent of the channel or water area to be protected; the number of officers and men for the fire control system depends upon the grouping of batteries and upon many details peculiar to the location of each command. It is but natural that no company of fixed strength can be devised which will fulfill all of the conditions of local defense.

The corps has therefore been organized with the estimated number of officers and enlisted men given in the tables showing the strength of the regular army (see pp. 70, 73). From this total strength the allotment of officers and men to each of the coast-defense commands and smaller units is made under the direction of the chief of coast artillery.

For administrative and tactical purposes, the coast defenses are grouped into districts, comprising in each case a section of the coast with all its included defenses, and special groups for the coast defense of our dependencies. The present grouping may be gleaned from the following:

North Atlantic Coast Artillery District (Hdqrs., Ft. Totten, N. Y.)—Coast defenses: PORTLAND—Embracing Fts. Williams, Preble, Levett, McKinley, Lyon, Baldwin, and Popham, Me.; headquarters, Ft. Williams, Me. PORTSMOUTH—Embracing Fts. Constitution and Stark, N. H., and Fts. Foster and McCleary, Me.; headquarters, Ft. Constitution, N. H. BOSTON—Embracing Fts. Banks, Warren, Strong, Heath, Revere, Andrews, and Standish, Mass.; headquarters, Ft. Warren, Mass. NEW BEDFORD—Embracing Ft. Rodman, Mass.; headquarters, Ft. Rodman, Mass. NARRAGANSETT BAY—Embracing Fts. Adams, Wetherill, Greble, Getty, and Philip Kearny, R. I.; headquarters, Ft. Adams, R. I. LONG ISLAND SOUND—Embracing Fts. H. G. Wright, Terry, Tyler, and Michie, N. Y., and Ft. Mansfield, R. I.; headquarters, Ft. H. G. Wright, N. Y. EASTERN NEW YORK—Embracing Fts. Schuyler and Totten, N. Y.; headquarters Ft. Totten, N. Y. SOUTHERN NEW YORK—Embracing Fts. Hamilton and Wadsworth, N. Y.; headquarters, Ft. Hamilton, N. Y. SANDY HOOK—Embracing Ft. Hancock, N. J.; headquarters, Ft. Hancock, N. J.

South Atlantic Coast Artillery District (Hdqrs., Charleston, S. C.)—Coast defenses: THE DELAWARE—Embracing Fts. Du Pont and

Delaware, Del., and Ft. Mott, N. J.; headquarters, Ft. Du Pont, Del. BALTIMORE—Embracing Fts. Howard, Carroll, Smallwood, and Armistead, Md.; headquarters, Ft. Howard, Md. THE POTOMAC — Embracing Ft. Washington, Md., and Ft. Hunt, Va.; headquarters, Ft. Hunt, Va. CHESAPEAKE BAY—Embracing Fts. Monroe and Wool, Va.; headquarters, Ft. Monroe, Va. THE CAPE FEAR—Embracing Ft. Caswell, N. C.; headquarters, Ft. Caswell, N. C. CHARLESTON —Embracing Fts. Moultrie and Sumter, S. C.; headquarters, Ft. Moultrie, S. C. SAVANNAH—Embracing Ft. Screven, Ga.; headquarters, Ft. Screven, Ga. TAMPA—Embracing Fts. Dade and De Soto, Fla.; headquarters, Ft. Dade, Fla. KEY WEST—Embracing Key West Barracks and Ft. Taylor, Fla.; headquarters, Key West Barracks, Fla. PENSACOLA—Embracing Fts. Barrancas, Pickens, and McRee, Fla.; headquarters, Ft. Barrancas, Fla. MOBILE—Embracing Fts. Morgan and Gaines, Ala.; headquarters, Ft. Morgan, Ala. NEW ORLEANS—Embracing Jackson Barracks and Fts. Jackson and St. Philip, La.; headquarters, Jackson Barracks, La. GALVESTON—Embracing Fts. Crockett, San Jacinto, and Travis, Tex.; headquarters, Ft. Crockett, Tex.

Pacific Coast Artillery District (Hdqrs., Ft. Miley, Cal.)—Coast defenses: SAN DIEGO—Em-

bracing Fts. Rosecrans, Pio Pico and San Diego Barracks, Cal.; headquarters, Ft. Rosecrans, Ft. Rosecrans, Cal. LOS ANGELES—Headquarters, Ft. MacArthur, Cal. SAN FRANCISCO—Embracing Fts. Baker, Miley, Winfield Scott, and Barry, Cal.; headquarters, Ft. Winfield Scott, Cal. THE COLUMBIA—Embracing Ft. Stevens, Oreg., and Fts. Columbia and Canby, Wash.; headquarters, Ft. Stevens, Oreg. PUGET SOUND — Embracing Fts. Worden, Ward, Casey, and Flagler, Middle Point, and Ft. Whitman, Wash.; headquarters, Ft. Worden, Wash.

In Philippine Department: MANILA AND SUBIC BAYS—Embracing Corregidor, Caballo, Carabao, El Fraile, Grande, and Chiquita Islands, Philippine Islands; headquarters, Ft. Mills, P. I.

In Hawaiian Department: OAHU—Embracing Fts. Ruger, De Russy, Kamehameha, and Armstrong; headquarters, Ft. Ruger, Hawaii.

Panama Coast Artillery District (Hdqrs., Corozal, Panama Canal Zone)—Coast defenses: CRISTOBAL—Embracing Fts. De Lesseps, and Sherman and Randolph; headquarters, Ft. De Lesseps. BALBOA—Embracing Fts. Grant and Amador; headquarters, Ft. Grant.

The troops will probably be distributed, ac-

cording to proposed plans, approximately as follows:

	Officers and men
Continental United States	24,629
Philippine Islands	2,810
Hawaii	1,512
Panama	2,268
Total	31,219

The permanent fortifications consist usually of works constructed of earth and concrete with armament mounted therein in fixed positions, together with the accessories necessary for the effective service of this armament. The submarine defenses consist of submarine mines, automobile torpedoes, and marine obstructions.

The armament of the permanent fortifications is classified as primary, intermediate, and secondary. Guns of the intermediate and secondary armament are called rapid-fire guns.

The primary armament consists of guns of 8-inch and larger caliber, and 12-inch mortars. These guns and mortars are used to attack armored vessels with shot and shell carrying high explosives. Shell are used at the longer ranges to penetrate thin armor, to silence the secondary batteries, to injure vessels by racking effect, and to demolish the fire-control stations at more than the battle ranges of naval ships. Shot are used at ranges where the perforation of main armor

is possible and are intended to reach the vitals of a ship before explosion.

Mortars employ high-angle fire, and are used at all ranges to attack the decks of ships with high explosive shell.

The intermediate armament consists of 6-inch, 5-inch, and 4.7-inch guns. This armament is used primarily to attack unarmored vessels, but may be used effectively to supplement the primary armament in the attack of armored vessels or the secondary armament in the defense of the mine fields.

The secondary armament consists of 4-inch and 3-inch guns. It is used for the defense of the mine fields and to supplement the intermediate armament in the attack of unarmored vessels.

The multiplicity of calibers is the result of gradual development rather than of design. The typical guns of the different classes are as follows:

Primary: 12-inch or larger guns, 12-inch mortars.

Intermediate: 6-inch guns.

Secondary: 3-inch guns.

For the effective service of the armament the following varied and extensive equipment is required:

(*a*) Ammunition and the means of conveying it to the guns and loading them.

(*b*) Sights for pointing the guns, and quadrants for giving them the proper elevation for the different ranges.

(*c*) Fire control equipment, consisting of range finders, plotting boards, and charts, and a complete system of communications between the guns and the observing stations.

(*d*) Power and light equipment. Modern improvements in coast fortification have found employment for electric power in many ways; current must be furnished for the searchlights; and the whole system of submarine mines is electrically controlled. All this requires an elaborate power plant in each system of fortifications.

(*e*) Wireless and other methods of long distance communication. In order to be perfectly prepared to fulfill their functions, the coast defenses must cooperate with the navy on the sea and with the mobile defenses on land. Constant communication with the former is at all times of paramount importance. The navy will have its scout vessels, equipped with wireless, far out at sea, engaged in reconnaissance. On the discovery of an enemy by these scouts, the news of his approach can be at once sent to the coast defense commander, and will enable him to immediately prepare for any eventuality, a bombardment, a landing, or an attempt to run by the forts.

The coast defenses are organized into a systematic chain of tactical command, the battery, the fire or mine command, the fort command, and the defense command.

A battery is a number of guns or mortars of the same caliber and power, grouped with the object of concentrating their fire upon a single target and of being directly commanded in action by a single individual. The term is used to include also the emplacements in which the guns are mounted and, in a more general sense, the personnel and accessories required to operate it.

Batteries are named usually for deceased officers who were killed in action or who were connected with the construction of fortifications or the construction and service of their armament. For example: "Battery Shipp," "Battery Parrot," "Battery De Russy," "Battery Barry."

A fire command is a group of batteries, generally not more than four, organized for command by a single individual. The batteries composing a fire command should be situated so that their fire covers the same or contiguous water areas.

Where it can be avoided, primary, intermediate, and secondary armaments are not grouped in the same fire command, nor are gun and mortar batteries so combined.

A mine command consists of the mine groups and the rapid-fire batteries specifically assigned

for their protection which are designated for control by a single individual.

A fort command consists of all fire and mine commands which may be controlled advantageously by one man in the defense of a harbor.

A defense command consists of those fort commands which are within supporting distance of one another, together with the coast artillery supports assigned to the defenses.

The coast artillery supports are detachments of mobile troops, infantry, cavalry, or field artillery, usually furnished by the National Guard, which are assigned to the coast defenses and placed under the command of the defense commander, for the immediate protection of the fortifications from sudden raids by landing parties from the enemy's ships.

The number of coast artillery troops assigned to each defense district is not available, and is not of special interest. It varies from time to time with changes in armament. The total number necessary at the present time to man the coast defense has been already given.

The distribution of the entire regular army after the addition of all the increments provided by the National Defense Act will therefore be approximately as indicated in the accompanying table.

APPROXIMATE DISTRIBUTION OF REGULAR ARMY

(April 1, 1917)

Localities	Infantry regiments	Cavalry regiments	Field artillery regiments	Engineer regiments	Engineer mounted battalions	Field signal battalions	Aero squadrons	Coast artillery troops
Philippines	9	3	3	1	...	1	1	2,810
Hawaii	9	1	2	1	...	1	1	1,512
Panama Canal Zone	9	1	1	1	...	1	1	2,268
Alaska	1	..	...	..	...	...	..	.....
Porto Rico	1	..	...	..	...	...	..	.....
Puget Sound area	9	3	3½	1	⅛	1⅛	1	.....
California	9	4	3½	1	⅛	1⅛	1	.....
North Atlantic States	9	4	3½	1	⅛	1⅛	1	.....
Middle West	9	3	3½	1	⅛	1⅛	1	.....
Mexican border	..	6	1	..	⅜	⅜	1	.....
United States	..	..	...	..	...	...	..	24,629
Total	65	25	21	7	2	9	8	31,219

IV

Reserves

ONE of the lessons that have been learned from the war in Europe is the value of a reserve of trained officers.

Germany furnishes a striking example of preparedness in this respect, as the number of officers, active and reserve, at the outbreak of war in 1914 has been estimated at about 100,000. With these she has been able at all times to officer adequately the vast armies that she has brought into being. Great Britain, on the other hand, whose policy has hitherto, like our own, caused her to rely upon a regular army and the territorials, which force approximates our National Guard in principle, found herself almost without trained officers, after the small but excellent regular army with which she entered the war had been virtually wiped out. Those who remained to her were too few even to officer the troops that she was obliged to maintain in France, and she had wofully few to train the millions that she must raise. The fact that it has taken practically two years to develop her full military strength is an object lesson that we

of all the nations of the earth should earnestly study.

In the National Defense Act Congress has endeavored to meet and remedy this defect in our military system by establishing an Officers' Reserve Corps under the following provisions—the actual wording of the act has been slightly modified, but the sense of the various provisions has been carefully preserved throughout:

For the purpose of securing a reserve of officers available for service as temporary officers in the regular army, as officers of the Quartermaster Corps and other staff corps and departments, as officers for recruit rendezvous and depots, and as officers of volunteers, there will be organized, under such rules and regulations as the President may prescribe an Officers' Reserve Corps of the regular army. Said corps is to consist of sections corresponding to the various arms, staff corps, and departments of the regular army. Except as otherwise provided, a member of the Officers' Reserve Corps is not subject to call for service in time of peace, and whenever called upon for service shall not, without his consent, be so called in a lower grade than that held by him in said reserve corps.

The President alone is authorized to appoint and commission as reserve officers in the various sections of the Officers' Reserve Corps, in all grades up to and including that of major, such citizens as, upon examination prescribed by the President, shall be found physically, mentally, and morally qualified to hold such commissions. The proportion of officers in any section of the Officers' Reserve Corps may not exceed the proportion for the same grade in the corresponding arm, corps, or department of the regular army, except that the number commissioned in the lowest authorized

grade in any section of the Officers' Reserve Corps shall not be limited.

No person may be appointed or reappointed a second lieutenant in the Officers' Reserve Corps after he shall have reached the age of thirty-two years, a first lieutenant after he shall have reached the age of thirty-six years, a captain after he shall have reached the age of forty years, or a major after he shall have reached the age of forty-five years. When an officer of the Reserve Corps shall reach the age limit fixed for appointment or reappointment in the grade in which commissioned he shall be honorably discharged from the service of the United States, and be entitled to retain his official title and, on occasions of ceremony, to wear the uniform of the highest grade he shall have held in the Officers' Reserve Corps: Nothing in the foregoing provisions as to the ages of officers applies to the appointment or reappointment of officers of the Quartermaster, Engineer, Ordnance, Signal, Judge Advocate, and Medical sections of said Reserve Corps.

In time of actual or threatened hostilities the President may order officers of the Officers' Reserve Corps, subject to such subsequent physical examinations as he may prescribe, to temporary duty with the regular army in grades thereof which cannot, for the time being, be filled by promotion, or as officers in volunteer or other organizations that may be authorized by law, or as officers at recruit rendezvous and depots, or on such other duty as the President may prescribe. While such reserve officers are on such service they shall, by virtue of their commissions as reserve officers, exercise command appropriate to their grade and rank in the organizations to which they may be assigned, and shall be entitled to the pay and allowances of the corresponding grades in the regular army, with increase of pay for length of active service, as allowed by law for officers of the regular army, from the date upon which they shall be required by the terms of their orders to obey the same.

To the extent provided for from time to time by

appropriations for this specific purpose, the Secretary of War is authorized to order reserve officers to duty with troops or at field exercises, or for instruction, for periods not to exceed fifteen days in any one calendar year, and while so serving such officers shall receive the pay and allowances of their respective grades in the regular army: With the consent of the reserve officers concerned, and within the limit of funds available for the purpose, such periods of duty may be extended for reserve officers as the Secretary of War may direct.

The Reserve Officers' Training Corps

With a view to filling the ranks of the Officers' Reserve Corps, and of providing a reserve from which may be selected temporary second lieutenants for the regular army, an Officers' Reserve Training Corps was established by the National Defense Act, having for its object the special training of students at our universities and colleges.

Two divisions are provided for, a senior division at universities or colleges requiring four years of collegiate study for a degree, including private military schools specially designated by all other public or private educational institutions.

No unit of the Training Corps will be established at any college or school until an officer of the regular army has been detailed thereto as professor of military science and tactics, nor until the institution shall maintain under instruction at least one hundred physically fit male stu-

dents. Furthermore, each institution must adopt the prescribed course of training, senior or junior, into its curriculum, and must devote at least an average of three hours per week during its academic year to such training.

The Secretary of War is empowered to issue to such institutions the necessary animals (horses or mules), arms, equipment, uniforms, and transportation as he may deem necessary for the training of the students, and to maintain camps of instruction for members of the Officers' Reserve Training Corps, to transport them to and from such camps at the expense of the United States, to subsist them while in camp, and to organize them into companies, battalions, and regiments.

The President may appoint graduates of the Officers' Reserve Training Corps to positions in the Officers' Reserve Corps. He may also appoint such graduates, for periods of six months, to be temporary second lieutenants of the regular army, with a monthly pay of $100 and the allowances provided for by law for second lieutenants.

After the termination of the six months' period, such appointees revert to their status as reserve officers.

The whole number of reserve officers appointed from the Reserve Officers' Training Corps may not exceed 50,000.

Reserves

The Regular Army Reserve

As a rule it will be the policy of the Federal government to maintain the regular army at its minimum strength during times of peace, raising it to a maximum on or before the outbreak of hostilities.

This has hitherto been the practice, a practice which has naturally lowered the efficiency of the most reliable troops at the disposal of the government. The effect has been at times so demoralizing to the troops that many efficient and able officers have almost come to believe that they could attain better results on the field of battle and at all times in campaign with their former minimum strength of trained men, than with the full organization largely made up of raw recruits. The experience of the Spanish-American War is still vivid, and the memories of that experience tell us that the recruits were a charge upon the rest of the command, a detriment rather than a help.

It is an excellent principle that the first-line troops should enter a war at their maximum strength, both in numbers and efficiency. The former has always been an easy problem to solve; the latter has hitherto presented grave difficulties.

It is with the solution of this problem in view that the present enlistment law has endeavored to provide for filling the ranks of the regular

organizations with experienced men by the proviso that three years only of the enlistment must be in active service, the remaining four being passed in the Regular Army Reserve, with the exception that such men as demonstrate their proficiency at the end of one year may then be furloughed to the reserve for the remaining period of six years.

The Regular Army Reserve so formed may be assigned as reserves to particular organizations, or they may be organized into separate units of any arm, corps, or department, officered by officers of the regular army or of the Officers' Reserve Corps, as the President may prescribe. In the former case they would be used as a real reserve, to supply the much-needed men to complete the minimum organizations maintained in time of peace. In the latter they would be most useful as auxiliaries to assist in the formation of new units when such become necessary.

The reserves may be called out for training for periods not to exceed fifteen days in any one year, and when so called the men are entitled to travel allowances and pay at the rate provided for their respective grades during such training.

In time of threatened hostilities or war, the President may mobilize the reserve, or any part thereof, and keep it in service for such period as he may determine the conditions demand, and the members of the reserve in such cases receive

not only transportation and subsistence from their homes to the place of mobilization, and pay according to their grade in the army, but also an amount equal to three dollars for each month that they have been in the reserve. At the same time, it is provided that all enlistments in force at the outbreak of war, including both the regular army and the reserve, shall continue in effect for one year. This assures the country the use of this valuable reserve for at least one year after war has commenced.

These provisions, it is believed, will result in the formation of an effective reserve for the regular army, which will fill its ranks with trained men when it most needs them, and will permit it to take the field with full strength and the maximum of efficiency.

The Enlisted Reserve Corps

At the same time that it was seen that an efficient reserve for the regular army was needed to fill the organizations to full strength at the outbreak of war, it was also foreseen that many skilled men would likewise be needed in the several departments to enable them to expand to the extent required by the conditions of war. The Regular Army Reserve is a tactical reserve for the tactical organizations, but the number of men ordinarily employed by the staff departments will not be great enough to form the necessary

reserve for supply and other service behind the lines.

Additional provision must be made for this exigency, and it was done in the establishment by law of the Enlisted Reserve Corps, as follows:

For the purpose of securing an additional reserve of enlisted men for military service with the Engineer, Signal, and Quartermaster Corps and the Ordnance and Medical Departments of the regular army, an Enlisted Reserve Corps, to consist of such number of enlisted men of such grade or grades as may be designated by the President from time to time, is hereby authorized.

There may be enlisted in the grade or grades hereinbefore specified, for a period of four years, under such rules as may be prescribed by the President, citizens of the United States, or persons who have declared their intentions to become citizens of the United States, subject to such physical, educational, and practical examination as may be prescribed in said rules. For men enlisting in said grade or grades certificates of enlistment in the Enlisted Reserve Corps shall be issued by the adjutant general of the army, but no such man shall be enlisted in said corps unless he shall be found physically, mentally, and morally qualified to hold such certificate and unless he shall be between the ages of eighteen and forty-five years. The certificates so given shall confer upon the holders when called into active service or for purposes of instruction and training, and during the period of such active service, instruction, or training, all the authority, rights, and privileges of like grades of the regular army. Enlisted men of the Enlisted Reserve Corps shall take precedence in said corps according to the dates of their certificates of enlistment therein and when called into active service or when called out for purposes of instruction or training shall take precedence next below all other enlisted men of like grades in the regular army. And the Secretary of

War is hereby authorized to issue to members of the Enlisted Reserve Corps and to persons who have participated in at least one encampment for the military instruction of citizens, conducted under the auspices of the War Department, distinctive rosettes or knots designed for wear with civilian clothing, and whenever a rosette or knot issued under the provisions of this section shall have been lost, destroyed, or rendered unfit for use without fault or neglect upon the part of the person to whom it is issued, the Secretary of War shall cause a new rosette or knot to be issued to such person without charge therefor.

It is a misdemeanor punishable by fine or imprisonment for one not authorized to wear the rosette or knot.

The President is authorized to assign members of the Enlisted Reserve Corps as reserves to particular organizations of the regular army, or to organize the Enlisted Reserve Corps, or any part thereof, into units or detachments of any arm, corps, or department in such manner as he may prescribe, and to assign to such units and detachments officers of the regular army or of the Officers' Reserve Corps, herein provided for.

To the extent provided from time to time by appropriations the Secretary of War may order enlisted men of the Enlisted Reserve Corps to active service for purposes of instruction or training for periods not to exceed fifteen days in any one calendar year: With the consent of such enlisted men and within the limits of funds available for such purposes, such periods of active service may be extended for such number of enlisted men as may be deemed necessary.

In time of actual or threatened hostilities the President may order the Enlisted Reserve Corps, in such numbers and at such times as may be considered necessary, to active service with the regular army, and while on such service members of said corps shall exercise command appropriate to their several grades and rank in the organizations to which they shall be assigned and shall be entitled to the pay and allowances of the corresponding grades in the regular army, with increase of

pay for length of service as now allowed by law for the regular army: And upon a call by the President for a volunteer force the members of the Enlisted Reserve Corps may be mustered into the service of the United States as volunteers for duty with the army in the grades held by them in the said corps, and shall be entitled to the pay and allowances of the corresponding grades in the regular army, with increase of pay for length of service, as now provided by law for the regular army.

V

The National Guard

THE National Guard under the names of the Militia and the Organized Militia, has existed in one form or another in most of the States since the adoption of the Constitution or their admission into the Union. The Second Amendment to the Constitution, which reads:

> A well-regulated militia being necessary to the security of a free State, the right of the people to keep and bear arms shall not be infringed,

has been held to contemplate and authorize the establishment and maintenance of a State force.

Comparatively little attention was paid by the Federal government to the proper organization of the militia until after the Spanish-American War. It was generally held that the militia was a State function and that the general government had no power to intervene in matters concerning it, they being left entirely to the State. However, in the war mentioned, the call for militia for federal service was made, and it was soon discovered that the system, as it then existed, was a failure. As a part of our first-line defense it could not be relied upon, and thinking men

began to consider what should be done to fit it for the part it should play in our national military system.

However, it was not until 1903 that Congress took any action in the matter. In that year the Dick Bill, so-called because it was fathered by Senator Dick of Ohio, became a law. It contemplated the organization of the militia on a more efficient basis, required uniformity of organization and a specified amount of training for the troops of the several States, and provided Federal aid, contingent, however, upon the fulfillment of the prescribed conditions as determined by inspection of the State troops by officers of the regular army.

No principle of Federal intervention in matters connected with the State troops was established by this law. The only hold of the Federal government upon the troops was through the Federal appropriations. They must comply with the conditions prescribed by the United States, or they would have no share in the funds allotted for militia purposes.

Portions of this statute have been reenacted from time to time, modifying and adding to the original provisions, and latterly supplying officers and enlisted men of the regular army as inspectors and instructors. No provision was made, however, to give to the Federal government any further control over the militia than that con-

ferred on it in the right to withhold the appropriations from those States the organization of whose militia did not conform to the standards set by the War Department.

The National Defense Act of 1916 practically reenacted all the preceding legislation, together with provisions for a modified federalization of the National Guard and for drafting it into the service of the United States. It can now be regarded as the organic law of the militia.

The militia clauses of the National Defense Act may be said to be the result of a compromise. Secretary of War Garrison had presented his plan for a Federal citizen force under the title "Continental Army." This plan received little encouragement, not because it was not a step in the right direction, but because the army, as a whole was unable to give it support. The plan was so detailed as to be inoperative, much was to be written into law that should have been left to regulation. There was no elasticity, no consideration given the fact that rules which would apply to New York City would not apply to the scattered settlements of the plains, and the reverse.

For these reasons the officers of the regular army, even those who were most desirous of supporting any plan for a citizen army under Federal control, could not speak in favor of the proposed plan. The organized militia opposed

the plan through their representatives in Washington, because they felt that the two citizen forces could not live at the same time.

Later in the session Senator George Chamberlain of Oregon, author of so much of the National Defense Act as related to the reorganization of the regular army and father of the bills for universal military training, submitted as a substitute his plan for a volunteer army in time of peace.

None of the errors of the Continental Army scheme were permitted to enter; the President was authorized to raise the force, the details of its organization, equipment, training and administration being left to him as commander in chief. He was at liberty to have one set of rules for city organizations and another for those of rural districts. A plan found ineffective could be changed by order, and would not require an act of Congress as was the case with many of the features of the Continental Army plan.

Senator Chamberlain's Section 56 was much debated. The regular army was for it almost to a man. The officers felt that it would give the volunteer system a thorough trial—that if it succeeded, we should have a dependable force to back up the first-line troops; if it failed, the country could not avoid the obvious necessity for abandoning the volunteer system in entirety. But the militia representatives opposed it more bit-

terly than they had the Continental Army—this though many of the rank and file were open in their approval.

Opposition in the House to the reorganization of the regular army, combined with the influence of the militia, defeated the volunteer army scheme. The House accepted the Senate's bill for the regular army, and the Senate accepted the House's bill for the Federalization of the militia.

It is interesting to note that this plan for improving the State troops is not a new one. It has been up several times and has failed of favorable consideration. When last seriously reported upon a minority disagreed, giving their reasons as follows:

> The minority making this report is convinced that the legislation proposed by the pending bill is not only unwise, but that it is dangerous in the extreme. Rather than enter upon a legislative course that will inevitably entail upon the general government an enormous expense, which may be found in dire emergency to have been wasted, a course that will surely lead to the creation of a great military force that will become so powerful politically that Congress will be no more able to resist its demands than it has been to resist the demands of the far less compactly organized and manageable army of pension applicants and their friends, this minority would favor a reasonable increase of the regular army, leaving the States to maintain their own troops in their own way and at their own expense without any aid whatever from the United States. (Report 1117, Part II, Sixty-second Congress, Third Session.)

With this preliminary statement the sections of the law affecting the militia are given in full as follows:

Sec. 57. COMPOSITION OF THE MILITIA.—The militia of the United States shall consist of all able-bodied male citizens of the United States and all other able-bodied males who have or shall have declared their intention to become citizens of the United States, who shall be more than eighteen years of age and, except as hereinafter provided, not more than forty-five years of age, and said militia shall be divided into three classes, the National Guard, the Naval Militia, and the Unorganized Militia.

Sec. 58. COMPOSITION OF THE NATIONAL GUARD.—The National Guard shall consist of the regularly enlisted militia between the ages of eighteen and forty-five years organized, armed, and equipped as hereinafter provided, and of commissioned officers between the ages of twenty-one and sixty-four years.

Sec. 59. EXEMPTIONS FROM MILITIA DUTY.—The Vice President of the United States; the officers, judicial and executive, of the Government of the United States and of the several States and Territories; persons in the military or naval service of the United States; custom-house clerks; persons employed by the United States in the transmission of the mail; artificers and workmen employed in the armories, arsenals, and navy yards of the United States; pilots; mariners actually employed in the sea service of any citizen or merchant within the United States, shall be exempt from militia duty without regard to age, and all persons who because of religious belief shall claim exemption from military service, if the conscientious holding of such belief by such person shall be established under such regulations as the President shall prescribe, shall be exempted from militia service in a combatant capacity; but no person so exempted shall be exempt from militia service in any

capacity that the President shall declare to be non-combatant.

Sec. 60. ORGANIZATION OF NATIONAL GUARD UNITS.—Except as otherwise specifically provided herein, the organization of the National Guard, including the composition of all units thereof, shall be the same as that which is or may hereafter be prescribed for the regular army, subject in time of peace to such general exceptions as may be authorized by the Secretary of War. And the President may prescribe the particular unit or units, as to branch or arm of service, to be maintained in each State, Territory, or the District of Columbia in order to secure a force which, when combined, shall form complete higher tactical units.

Sec. 61. MAINTENANCE OF OTHER TROOPS BY THE STATES.—No State shall maintain troops in time of peace other than as authorized in accordance with the organization prescribed under this Act: *Provided,* That nothing contained in this Act shall be construed as limiting the rights of the States and Territories in the use of the National Guard within their respective borders in time of peace: *Provided further,* That nothing contained in this Act shall prevent the organization and maintenance of State police or constabulary.

Sec. 62. NUMBER OF THE NATIONAL GUARD.—The number of enlisted men of the National Guard to be organized under this Act within one year from its passage shall be for each State in the proportion of two hundred such men for each Senator and Representative in Congress from such State, and a number to be determined by the President for each Territory and the District of Columbia, and shall be increased each year thereafter in the proportion of not less than 50 per cent until a total peace strength of not less than eight hundred enlisted men for each Senator and Representative in Congress shall have been reached: *Provided,* That in States which have but one Representative in Congress such increase shall be at the discretion of the President: *Provided further,* That this shall not be construed to

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prevent any State, Territory, or the District of Columbia from organizing the full number of troops required under this section in less time than is specified in this section, or from maintaining existing organizations if they shall conform to such rules and regulations regarding organization, strength, and armament as the President may prescribe: *And provided further,* That nothing in this Act shall be construed to prevent any State with but one Representative in Congress from organizing one or more regiments of troops, with such auxiliary troops as the President may prescribe; such organizations and members of such organizations to receive all the benefits accruing under this Act under the conditions set forth herein: *Provided further,* That the word Territory as used in this Act and in all laws relating to the land militia and National Guard shall include and apply to Hawaii, Alaska, Porto Rico, and the Canal Zone, and the militia of the Canal Zone shall be organized under such rules and regulations, not in conflict with the provisions of this Act, as the President may prescribe.

Sec. 64. ASSIGNMENT OF NATIONAL GUARD TO BRIGADES AND DIVISIONS.—For the purpose of maintaining appropriate organization and to assist in instruction and training, the President may assign the National Guard of the several States and Territories and the District of Columbia to divisions, brigades, and other tactical units, and may detail officers either from the National Guard or the regular army to command such units: *Provided,* That where complete units are organized within a State, Territory, or the District of Columbia the commanding officers thereof shall not be displaced under the provisions of this section.

Sec. 67. APPROPRIATION, APPORTIONMENT, AND DISBURSEMENT OF FUNDS FOR THE NATIONAL GUARD.—A sum of money shall hereafter be appropriated annually, to be paid out of any money in the Treasury not otherwise appropriated, for the support of the National Guard, including the expense of providing arms, ordnance stores,

quartermaster stores, and camp equipage, and all other military supplies for issue to the National Guard, and such other expenses pertaining to said guard as are now or may hereafter be authorized by law.

The appropriation provided for in this section shall be apportioned among the several States and Territories under just and equitable procedure to be prescribed by the Secretary of War and in direct ratio to the number of enlisted men in active service in the National Guard existing in such States and Territories at the date of apportionment of said appropriation, and to the District of Columbia, under such regulations as the President may prescribe: *Provided,* That the sum so apportioned among the several States, Territories, and the District of Columbia, shall be available under such rules as may be prescribed by the Secretary of War for the actual and necessary expenses incurred by officers and enlisted men of the regular army when traveling on duty in connection with the National Guard; for the transportation of supplies furnished to the National Guard for the permanent equipment thereof; for office rent and necessary office expenses of officers of the regular army on duty with the National Guard; for the expenses of the Militia Bureau, including clerical services, now authorized for the Division of Militia Affairs; for expenses of enlisted men of the regular army on duty with the National Guard, including quarters, fuel, light, medicines, and medical attendance; and such expenses shall constitute a charge against the whole sum annually appropriated for the support of the National Guard, and shall be paid therefrom and not from the allotment duly apportioned to any particular State, Territory, or the District of Columbia; for the promotion of rifle practice, including the acquisition, construction, maintenance, and equipment of shooting galleries and suitable target ranges; for the hiring of horses and draft animals for the use of mounted troops, batteries, and wagons; for forage for the same; and for such other incidental expenses in connection with lawfully authorized encampments, maneuvers, and field instruction

as the Secretary of War may deem necessary, and for such other expenses pertaining to the National Guard as are now or may hereafter be authorized by law.

The governor of each State and Territory and the commanding general of the National Guard of the District of Columbia shall appoint, designate, or detail, subject to the approval of the Secretary of War, an officer of the National Guard of the State, Territory, or District of Columbia who shall be regarded as property and disbursing officer for the United States. He shall receipt and account for all funds and property belonging to the United States in possession of the National Guard of his State, Territory, or District, and shall make such returns and reports concerning the same as may be required by the Secretary of War. The Secretary of War is authorized, on the requisition of the governor of a State or Territory or the commanding general of the National Guard of the District of Columbia, to pay to the property and disbursing officer thereof so much of its allotment out of the annual appropriation for the support of the National Guard as shall, in the judgment of the Secretary of War, be necessary for the purposes enumerated therein. He shall render, through the War Department, such accounts of Federal funds intrusted to him for disbursement as may be required by the Treasury Department. Before entering upon the performance of his duties as property and disbursing officer he shall be required to give good and sufficient bond to the United States, the amount thereof to be determined by the Secretary of War, for the faithful performance of his duties and for the safe-keeping and proper disposition of the Federal property and funds intrusted to his care. He shall, after having qualified as property and disbursing officer, receive pay for his services at a rate to be fixed by the Secretary of War, and such compensation shall be a charge against the whole sum, annually appropriated for the support of the National Guard: *Provided,* That when traveling in the performance of his official duties under orders issued by the proper authorities he shall be

reimbursed for his actual necessary traveling expenses, the sum to be made a charge against the allotment of the State, Territory, or District of Columbia: *Provided further,* That the Secretary of War shall cause an inspection of the accounts and records of the property and disbursing officer to be made by an inspector general of the army at least once each year: *And provided further,* That the Secretary of War is empowered to make all rules and regulations necessary to carry into effect the provisions of this section.

Sec. 68. LOCATION OF UNITS.—The States and Territories shall have the right to determine and fix the location of the units and headquarters of the National Guard within their respective borders: *Provided,* That no organization of the National Guard, members of which shall be entitled to and shall have received compensation under the provisions of this Act, shall be disbanded without the consent of the President, nor, without such consent, shall the commissioned or enlisted strength of any such organization be reduced below the minimum that shall be prescribed therefor by the President.

Sec. 69. ENLISTMENTS IN THE NATIONAL GUARD.—Hereafter the period of enlistment in the National Guard shall be for six years, the first three years of which shall be in an active organization and the remaining three years in the National Guard Reserve, hereinafter provided for, and the qualifications for enlistment shall be the same as those prescribed for admission to the regular army: *Provided,* That in the National Guard the privilege of continuing in active service during the whole of an enlistment period and of reenlisting in said service shall not be denied by reason of anything contained in this Act.

Sec. 70. FEDERAL ENLISTMENT CONTRACT. — Enlisted men in the National Guard of the several States, Territories, and the District of Columbia now serving under enlistment contracts which contain an obligation to defend the Constitution of the United States and to obey the orders of the President of the United States shall be

recognized as members of the National Guard under the provisions of this Act for the unexpired portion of their present enlistment contracts. When any such enlistment contract does not contain such obligation, the enlisted man shall not be recognized as a member of the National Guard until he shall have signed an enlistment contract and taken and subscribed to the following oath of enlistment, upon signing which credit shall be given for the period already served under the old enlistment contract: "I do hereby acknowledge to have voluntarily enlisted this —— day of ——, 19—, as a soldier in the National Guard of the United States and of the State of ——, for the period of three years in service and three years in the reserve, under the conditions prescribed by law, unless sooner discharged by proper authority. And I do solemnly swear that I will bear true faith and allegiance to the United States of America and to the State of ——, and that I will serve them honestly and faithfully against all their enemies whomsoever, and that I will obey the orders of the President of the United States and of the governor of the State of ——, and of the officers appointed over me according to law and the rules and articles of war."

Sec. 71. Hereafter all men enlisting for service in the National Guard shall sign an enlistment contract and take and subscribe to the oath prescribed in the preceding section of this Act.

Sec. 72. DISCHARGE OF ENLISTED MEN FROM THE NATIONAL GUARD.—An enlisted man discharged from service in the National Guard shall receive a discharge in writing in such form and with such classification as is or shall be prescribed for the regular army, and in time of peace discharges may be given prior to the expiration of terms of enlistment under such regulations as the President may prescribe.

Sec. 73. FEDERAL OATH FOR NATIONAL GUARD OFFICERS. Commissioned officers of the National Guard of the several States, Territories, and the District of Columbia now serving under commissions regularly issued shall continue in office, as officers of the National Guard,

without the issuance of new commissions: *Provided,* That said officers have taken, or shall take and subscribe to the following oath of office: "I, ——, do solemnly swear that I will support and defend the Constitution of the United States and the constitution of the State of ——, against all enemies, foreign and domestic; that I will bear true faith and allegiance to the same; that I will obey the orders of the President of the United States and of the governor of the State of ——; that I make this obligation freely, without any mental reservation or purpose of evasion, and that I will well and faithfully discharge the duties of the office of —— in the National Guard of the United States and of the State of —— upon which I am about to enter, so help me God."

Sec. 74. QUALIFICATIONS FOR NATIONAL GUARD OFFICERS.—Persons hereafter commissioned as officers of the National Guard shall not be recognized as such under any of the provisions of this Act unless they shall have been selected from the following classes and shall have taken and subscribed to the oath of office prescribed in the preceding section of this Act: Officers or enlisted men of the National Guard; officers on the reserve or unassigned list of the National Guard; officers, active or retired, and former officers of the United States army, navy, and Marine Corps; graduates of the United States Military and Naval academies and graduates of schools, colleges, and universities where military science is taught under the supervision of an officer of the regular army, and, for the technical branches and staff corps or departments, such other civilians as may be especially qualified for duty therein.

Sec. 75. The provisions of this Act shall not apply to any person hereafter appointed an officer of the National Guard unless he first shall have successfully passed such tests as to his physical, moral, and professional fitness as the President shall prescribe. The examination to determine such qualifications for commission shall be conducted by a board of three com-

missioned officers appointed by the Secretary of War from the regular army or the National Guard, or both.

Sec. 76. FILLING OF VACANCIES WHEN DRAFTED INTO FEDERAL SERVICE.—All vacancies occurring in any grade of commissioned officers in any organization in the military service of the United States and composed of persons drafted from the National Guard under the provision of this Act shall be filled by the President, as far as practicable, by the appointment of persons similarly taken from said guard, and in the manner prescribed by law for filling similar vacancies occurring in the volunteer forces.

Sec. 77. ELIMINATION AND DISPOSITION OF OFFICERS.—At any time the moral character, capacity, and general fitness for the service of any National Guard officer may be determined by an efficiency board of three commissioned officers, senior in rank to the officer whose fitness for service shall be under investigation, and if the findings of such board be unfavorable to such officer and be approved by the official authorized to appoint such an officer, he shall be discharged. Commissions of officers of the National Guard may be vacated upon resignation, absence without leave for three months, upon the recommendation of an efficiency board, or pursuant to sentence of a court-martial. Officers of said guard rendered surplus by the disbandment of their organizations shall be placed in the National Guard Reserve. Officers may, upon their own application, be placed in the said reserve.

Sec. 78. THE NATIONAL GUARD RESERVE.—Subject to such rules and regulations as the President may prescribe, a National Guard Reserve shall be organized in each State, Territory, and the District of Columbia, and shall consist of such organizations, officers, and enlisted men as the President may prescribe, or members thereof may be assigned as reserves to an active organization of the National Guard: *Provided,* That members of said reserve, when engaged in field or coast-defense training with the active National Guard, shall receive the same Federal pay and allowances as enlisted men of like

grade on the active list of said guard when likewise engaged: *Provided further,* That, except as otherwise specifically provided in this Act, no commissioned or enlisted reservist shall receive any pay or allowances out of any appropriation made by Congress for National Guard purposes.

Sec. 79. RESERVE BATTALIONS FOR RECRUIT TRAINING.—When members of the National Guard and the enlisted reserve thereof of any State, Territory, or the District of Columbia shall have been brought into the service of the United States in time of war, there shall be immediately organized, either from such enlisted reserve, or from the unorganized militia, in such State, Territory, or District, one reserve battalion for each regiment of infantry or cavalry, or each nine batteries of field artillery, or each twelve companies of coast artillery, brought into the service of the United States, and such reserve battalion shall constitute the fourth battalion of any such regiment or twelve companies of coast artillery. Reserve battalions shall consist of four companies of such strength as may be prescribed by the President of the United States. When the members of three or more regiments of the National Guard of any State, Territory, or District shall have been brought into the service of the United States, the reserve battalions of such regiments may be organized into provisional regiments and higher units. If for any reason there shall not be enough voluntary enlistments to keep the reserve battalions at the prescribed strength, a sufficient number of the unorganized militia shall be drafted into the service of the United States to maintain each of such battalions at the proper strength. As vacancies occur from death or other causes in any organization in the service of the United States and composed of men taken from the National Guard, men shall be transferred from the reserve battalions to the organizations in the field so that such organizations may be maintained at war strength. Officers for the reserve battalions provided for herein shall be drafted from the National Guard Reserve or coast artillery companies

of the National Guard or the Officers' Reserve Corps, such officers to be taken, if practicable, from the States, respectively, in which the battalions shall be organized. Officers and noncommissioned officers returned to their home stations because of their inability to perform active field service may be assigned to reserve battalions for duty, and all soldiers invalided home shall be assigned to and carried on the rolls of reserve battalions until returned to duty or until discharged.

Sec. 82. ARMAMENT, EQUIPMENT, AND UNIFORM OF THE NATIONAL GUARD.—The National Guard of the United States shall, as far as practicable, be uniformed, armed, and equipped with the same type of uniforms, arms, and equipments as are or shall be provided for the regular army.

Sec. 83. The Secretary of War is hereby authorized to procure, under such regulations as the President may prescribe, by purchase or manufacture, within the limits of available appropriations made by Congress, and to issue from time to time to the National Guard, upon requisition of the governors of the several States and Territories or the commanding general of the National Guard of the District of Columbia, such number of United States service arms, with all accessories, field-artillery material, engineer, coast artillery, signal, and sanitary material, accouterments, field uniforms, clothing, equipage, publications, and military stores of all kinds, including public animals, as are necessary to arm, uniform, and equip for field service the National Guard in the several States, Territories, and the District of Columbia: *Provided,* That as a condition precedent to the issue of any property as provided for by this Act, the State, Territory, or the District of Columbia desiring such issue shall make adequate provision, to the satisfaction of the Secretary of War, for the protection and care of such property: *Provided further,* That, whenever it shall be shown to the satisfaction of the Secretary of War that the National Guard of any State, Territory, or the District of Columbia, is properly organized, armed, and equipped for field service, funds

allotted to that State, Territory, or District for the support of its National Guard may be used for the purchase, from the War Department, of any article issued by any of the supply departments of the army.

Sec. 84. Under such regulations as the President may prescribe, whenever a new type of equipment, small arm, or field gun shall have been issued to the National Guard of the several States, Territories, and the District of Columbia, such equipment, small arms, and field guns, including all accessories, shall be furnished without charging the cost or value thereof or any expense connected therewith against the appropriations provided for the support of the National Guard.

Sec. 85. Each State, Territory, and the District of Columbia shall, on the receipt of new property issued to replace obsolete or condemned prior issues, turn in to the War Department or otherwise dispose of, in accordance with the directions of the Secretary of War, all property so replaced or condemned, and shall not receive any money credit therefor.

Sec. 89. HORSES FOR CAVALRY AND FIELD ARTILLERY OF NATIONAL GUARD.—Funds allotted by the Secretary of War for the support of the National Guard shall be available for the purchase, under such regulations as the Secretary of War may prescribe, of horses conforming to the regular army standards for the use of field artillery and cavalry of the National Guard, said horses to remain the property of the United States and to be used solely for military purposes.

Horses so purchased may be issued not to exceed thirty-two to any one battery or troop, under such regulations as the Secretary of War may prescribe; and the Secretary of War is further authorized to issue, in lieu of purchase, for the use of such organizations, condemned army horses which are no longer fit for service, but which may be suitable for the purposes of instruction, such horses to be sold as now provided by law when said purposes shall have been served.

Sec. 91. DISCIPLINE TO CONFORM TO THAT OF REGULAR ARMY.—The discipline (which includes training) of the

National Guard shall conform to the system which is now or may hereafter be prescribed for the regular army, and the training shall be carried out by the several States, Territories, and the District of Columbia, so as to conform to the provisions of this Act.

Sec. 92. TRAINING OF THE NATIONAL GUARD.—Each company, troop, battery, and detachment in the National Guard shall assemble for drill and instruction, including indoor target practice, not less than forty-eight times each year, and shall, in addition thereto, participate in encampments, maneuvers, or other exercises, including outdoor target practice, at least fifteen days in training each year, including target practice, unless such company, troop, battery, or detachment shall have been excused from participation in any part thereof by the Secretary of War: *Provided*, That credit for an assembly for drill or for indoor target practice shall not be given unless the number of officers and enlisted men present for duty at such assembly shall equal or exceed a minimum to be prescribed by the President, nor unless the period of actual military duty and instruction participated in by each officer and enlisted man at each such assembly at which he shall be credited as having been present shall be of at least one and one-half hours' duration and the character of training such as may be prescribed by the Secretary of War.

Sec. 93. INSPECTIONS OF THE NATIONAL GUARD.—The Secretary of War shall cause an inspection to be made at least once each year by inspectors general, and if necessary by other officers, of the regular army, detailed by him for that purpose, to determine whether the amount and condition of the property in the hands of the National Guard is satisfactory; whether the National Guard is organized as hereinbefore prescribed; whether the officers and enlisted men possess the physical and other qualifications prescribed; whether the organization and the officers and enlisted men thereof are sufficiently armed, uniformed, equipped, and being trained and instructed for active duty in the field or coast defense, and whether the records are being

kept in accordance with the requirements of this Act. The reports of such inspections shall serve as the basis for deciding as to the issue to and retention by the National Guard of the military property provided for by this Act, and for determining what organizations and individuals shall be considered as constituting parts of the National Guard within the meaning of this Act.

Sec. 94. ENCAMPMENTS AND MANEUVERS. — Under such regulations as the President may prescribe the Secretary of War is authorized to provide for the participation of the whole or any part of the National Guard in encampments, maneuvers, or other exercises, including outdoor target practice, for field or coast-defense instruction, either independently or in conjunction with any part of the regular army, and there may be set aside from the funds appropriated for that purpose and allotted to any State, Territory, or the District of Columbia, such portion of said funds as may be necessary for the payment, subsistence, transportation, and other proper expenses of such portion of the National Guard of such State, Territory, or the District of Columbia as shall participate in such encampments, maneuvers, or other exercises, including outdoor target practice, for field and coast-defense instruction; and the officers and enlisted men of such National Guard while so engaged shall be entitled to the same pay, subsistence, and transportation as officers and enlisted men of corresponding grades of the regular army are or hereafter may be entitled by law.

Sec. 97. Under such regulations as the President may prescribe the Secretary of War may provide camps for the instruction of officers and enlisted men of the National Guard. Such camps shall be conducted by officers of the regular army detailed by the Secretary of War for that purpose, and may be located either within or without the State, Territory, or District of Columbia to which the members of the National Guard designated to attend said camps shall belong. Officers and enlisted men attending such camps shall be entitled to pay and transportation, and enlisted men to subsistence in addi-

tion, at the same rates as for encampments or maneuvers for field or coast-defense instruction.

Sec. 98. When any portion of the National Guard shall participate in encampments, maneuvers, or other exercises, including outdoor target practice, for field or coast-defense instruction, under the provisions of this Act, it may, after being duly mustered, be paid at any time after such muster for the period from the date of leaving the home rendezvous to date of return thereto as determined in advance, both dates inclusive; and such payment, if otherwise correct, shall pass to the credit of the disbursing officer making the same.

Sec. 99. NATIONAL GUARD OFFICERS AND MEN AT SERVICE SCHOOLS, AND SO FORTH.—Under such regulations as the President may prescribe, the Secretary of War may, upon the recommendation of the governor of any State or Territory or the commanding general of the National Guard of the District of Columbia, authorize a limited number of selected officers or enlisted men of the National Guard to attend and pursue a regular course of study at any military service school of the United States, except the United States Military Academy; or to be attached to an organization of the same arm, corps, or department to which such officer or enlisted man shall belong, for routine practical instruction at or near an army post during a period of field training or other outdoor exercises; and such officer or enlisted man shall receive, out of any National Guard allotment of funds available for the purpose, the same travel allowances and quarters, or commutation of quarters, and the same pay, allowances, and subsistence to which an officer or enlisted man of the regular army would be entitled for attending such school, college, or practical course of instruction under orders from proper military authority, while in actual attendance at such school, college, or practical course of instruction: *Provided,* That in no case shall the pay and allowances authorized by this section exceed those of a captain.

Sec. 100. DETAIL OF OFFICERS OF REGULAR ARMY TO DUTY WITH THE NATIONAL GUARD.—The Secretary of

War shall detail officers of the active list of the army to duty with the National Guard in each State, Territory, or District of Columbia, and officers so detailed may accept commissions in the National Guard, with the permission of the President and terminable in his discretion, without vacating their commissions in the regular army or being prejudiced in their relative or lineal standing therein. The Secretary of War may, upon like application, detail one or more enlisted men of the regular army with each State, Territory, or District of Columbia for duty in connection with the National Guard. But nothing in this section shall be so construed as to prevent the detail of retired officers as now provided by law.

Sec. 101. NATIONAL GUARD, WHEN SUBJECT TO LAWS GOVERNING REGULAR ARMY.—The National Guard when called as such into the service of the United States shall, from the time they are required by the terms of the call to respond thereto, be subject to the laws and regulations governing the regular army, so far as such laws and regulations are applicable to officers and enlisted men whose permanent retention in the military service, either on the active list or on the retired list, is not contemplated by existing law.

Sec 109. PAY FOR NATIONAL GUARD OFFICERS.—Certain commissioned officers on the active list belonging to organizations of the National Guard of each State, Territory, and the District of Columbia participating in the apportionment of the annual appropriation for the support of the National Guard shall receive compensation for their services, except during periods of service for which they may become lawfully entitled to the same pay as officers of corresponding grades of the regular army, as follows, not to include longevity pay: A captain $500 per year and the same pay shall be paid to every officer of higher rank than that of captain, a first lieutenant $240 per year, and a second lieutenant $200 per year. Regulations to be prescribed by the Secretary of War shall determine the amount and character of service that must be rendered by officers to

entitle them to the whole or specific parts of the maximum pay hereinbefore authorized: *Provided,* That all staff officers, aids-de-camp, and chaplains shall receive not to exceed one-half of the pay of a captain, except that regimental adjutants, and majors and captains in command of machine-gun companies, ambulance companies, field hospital companies, or sanitary troops shall receive the pay hereinbefore authorized for a captain.

Sec. 110. PAY FOR NATIONAL GUARD ENLISTED MEN.—Each enlisted man on the active list belonging to an organization of the National Guard of a State, Territory, or the District of Columbia, participating in the apportionment of the annual appropriation for the support of the National Guard, shall receive compensation for his services, except during periods of service for which he may become lawfully entitled to the same pay as an enlisted man of corresponding grade in the regular army, at a rate equal to twenty-five per centum of the initial pay now provided by law for enlisted men of corresponding grades of the regular army: *Provided,* That such enlisted man shall receive the compensation herein provided if he shall have attended not less than forty-eight regular drills during any one year, and a proportionate amount for attendance upon a lesser number of such drills, not less than twenty-four; and no such enlisted man shall receive any part of said compensation except as authorized by this proviso and the three provisos next following: *Provided further,* That the compensation provided herein shall be computed for semiannual periods, beginning the first day of January and the first day of July of each year, in proportion to the number of drills attended; and no compensation shall be paid to any enlisted man for the first semiannual period of any year unless he shall have attended during said period at least twenty-four drills, but any lesser number of drills attended during said period shall be reckoned with the drills attended during the second semiannual period in computing the compensation, if any, due him for that year: *Provided further,* That when any man enters into an enlistment

other than an immediate reenlistment he shall be entitled to proportional compensation for that year if during the remainder of the year he shall attend a number of drills whose ratio to twenty-four is not less than the ratio of the part of the year so served to the whole year; and when any man's enlistment shall expire the compensation, if any, to which he may be entitled shall be determined in like manner: *Provided further,* That periods of any actual military duty equivalent to the drills herein prescribed (except those periods of service for which members of the National Guard may become lawfully entitled to the same pay as officers and enlisted men of the corresponding grades in the regular army) may be accepted as service in lieu of such drills when so provided by the Secretary of War.

All amounts appropriated for the purpose of this and the last preceding section shall be disbursed and accounted for by the officers and agents of the Quartermaster Corps of the Army, and all disbursements under the foregoing provisions of this section shall be made as soon as practicable after the thirty-first day of December and the thirtieth day of June of each year upon pay rolls prepared and authenticated in the manner to be prescribed by the Secretary of War: *Provided,* That stoppages may be made against the compensation payable to any officer or enlisted man hereunder to cover the cost of public property lost or destroyed by and chargeable to such officer or enlisted man.

Except as otherwise specifically provided herein, no money appropriated under the provisions of this or the last preceding section shall be paid to any person not on the active list, nor to any person over sixty-four years of age, nor to any person who shall fail to qualify as to fitness for military service under such regulations as the Secretary of War shall prescribe, nor to any State, Territory, or District, or officer or enlisted man in the National Guard thereof, unless and until such State, Territory, or District provides by law that staff officers, including officers of the Pay, Inspection, Subsistence, and Medical Departments, hereafter appointed

shall have had previous military experience and shall hold their positions until they shall have reached the age of sixty-four years, unless retired prior to that time by reason of resignation, disability, or for cause to be determined by a court-martial legally convened for that purpose, and that vacancies among said officers shall be filled by appointment from the officers of the militia of such State, Territory, or District.

Sec. 111. NATIONAL GUARD WHEN DRAFTED INTO FEDERAL SERVICE.—When Congress shall have authorized the use of the armed land forces of the United States, for any purpose requiring the use of troops in excess of those of the regular army, the President may, under such regulations, including such physical examination, as he may prescribe, draft into the military service of the United States, to serve therein for the period of the war unless sooner discharged, any or all members of the National Guard and of the National Guard Reserve. All persons so drafted shall, from the date of their draft, stand discharged from the militia, and shall from said date be subject to such laws and regulations for the government of the Army of the United States as may be applicable to members of the volunteer army, and shall be embodied in organizations corresponding as far as practicable to those of the regular army or shall be otherwise assigned as the President may direct. The commissioned officers of said organizations shall be appointed from among the members thereof, officers with rank not above that of colonel to be appointed by the President alone, and all other officers to be appointed by the President by and with the advice and consent of the Senate. Officers and enlisted men in the service of the United States under the terms of this section shall have the same pay and allowances as officers and enlisted men of the regular army of the same grades and the same prior service.

Sec. 112. RIGHTS TO PENSIONS.—When any officer or enlisted man of the National Guard drafted into the service of the United States in time of war is disabled by reason of wounds or disability received or incurred

while in the active service of the United States in time of war, he shall be entitled to all the benefits of the pension laws existing at the time of his service, and in case such officer or enlisted man dies in the active service of the United States in time of war or in returning to his place of residence after being mustered out of such service, or at any other time in consequence of wounds or disabilities received in such active service, his widow and children, if any, shall be entitled to all the benefits of such pension laws.

Sec. 115. PHYSICAL EXAMINATION.—Every officer and enlisted man of the National Guard who shall be called into the service of the United States as such shall be examined as to his physical fitness under such regulations as the President may prescribe without further commission or enlistment: *Provided,* That immediately preceding the muster out of an officer or enlisted man called into the active service of the United States he shall be physically examined under rules prescribed by the President of the United States, and the record thereof shall be filed and kept in the War Department.

Sec. 116. NONCOMPLIANCE WITH FEDERAL ACT.—Whenever any State shall, within a limit of time to be fixed by the President, have failed or refused to comply with or enforce any requirement of this Act, or any regulation promulgated thereunder and in aid thereof by the President or the Secretary of War, the National Guard of such State shall be debarred, wholly or in part, as the President may direct, from receiving from the United States any pecuniary or other aid, benefit, or privilege authorized or provided by this Act or any other law.

It will be noted that the more important provisions of the law are those that require the National Guard to conform to the regular army in organization, training, and discipline, the Federal oath of both officers and enlisted men, and

the payment of the troops by the Federal government, both when undergoing instruction at their home stations and in the field, thus establishing a retainer fee for which Federal service may be required.

The most important provision of all is, however, that which permits the President, with the consent of Congress, to draft the entire body of the National Guard into the service of the United States. All former laws were impotent in this respect, and the militiaman could be called as such only. To definitely enter the service of the Federal government he must volunteer, leaving it to the option of the individual whether or not he would come to the support of the government in time of need, even though he had received the benefits of Federal training and of the expenditure of Federal funds.

The present legislation is expected to obviate this defect, and to require the man who has taken the Federal oath and accepted the Federal pay to enter the service of his country when it needs and calls him.

It should be added, however, that in these very provisions, there is the possibility of a dissolution of the guard. The small pay is insufficient for a living wage, and the first interest of the guardsmen must be their civil employment. Those most familiar with the militia state that it will be impossible for the average organization to attain

the standard of training and discipline required, or to recruit sufficient members to insure an attendance at drills permitting them to draw the Federal pay authorized, and the provision for drafting the National Guardsmen in war is manifestly unfair. Why should they be called upon to suffer the draft when all the other citizens may volunteer to assume the military obligation or decline to do so at will? This inequitable distribution of national duty, this penalizing of a special class because of their patriotism, is the reverse of true democracy and is daily becoming more appreciated by those affected. From the guardsmen themselves will probably come the strongest demand that all who share the benefits of the country's protection and opportunities shall stand ready to serve in case of need.

VI

The Militia System

THAT the militia, under the name given it in the Constitution, or disguised under another appellation, has been a "broken staff," as it was characterized by Washington during the Revolution, is one of the facts that is impressed upon us by a study of the military history of our country in all its wars.

General Emory Upton, in his "Military Policy of the United States," cites as the principal causes of the weakness of our military system:

1. The employment of militia and undisciplined troops commanded by generals and officers utterly ignorant of the military art.
2. Reliance upon voluntary enlistments, instead of voluntary enlistment coupled with conscription.
3. The intrusion of the States in military affairs, and the consequent waging of all our wars on the theory that we are a confederacy instead of a nation.

These three causes of weakness embody the principal defects of the National Guard system. They may be to some extent modified by a certain degree of Federalization, and by the partial instruction of officers and men, as now provided by law, but in the main they are as truly causes

of weakness now as they have been in the past, and they will so continue in the future. They are inherent defects, and depend upon principles that cannot be altered by legislation.

It is true that the only decisive test of the system, as it has now been modified by the recent National Defense Act, is the costly one of war, but it is susceptible of analysis in the light of experience, and comparisons may be made that clearly indicate that not only is it not the best defense that we can provide, but that it is an actual menace in case we were confronted by a first-class power whose military system is based on the principle of "the nation in arms."

First, as to the character of the troops.

It is well known that the young men who have entered the National Guard have done so from the most praiseworthy motives, and that in consequence there must be attributed to them the true spirit of the American volunteer.

To the officers must be also paid the tribute that they have entered the guard with the pure intention of rendering it as far as possible an efficient military organization; that they have devoted their time and their means to its improvement, and that, in consequence, whatever efficiency the National Guard possesses is the result of their honest endeavor and self-sacrifice.

However, in their eagerness to conform to the

standard of numbers that has heretofore been set by the Federal government, the physical requirements for the enlistment of the rank and file has been lowered, to such an extent that, on the mobilization of the National Guard for service on the Mexican border, fully 30 per cent[1] of the troops were found to be physically unfit for service. What dependence can be placed upon a force of which nearly one-third must be discharged as unserviceable just at the moment when they are most needed?

Nor is this a condition peculiar to the National Guard at the particular time referred to. The requirement of a minimum strength will always produce a lowering of the standard of the guard, and the recent experience of the mobilization may be expected at any time when it is called into the service of the United States.

Discipline, as referred to by General Upton, is taken in its higher sense of "training to act in accordance with rules." It is therefore a direct function of training. Military discipline in this sense may be resolved into three factors:

1. The soldier's reliance upon himself and upon his weapon.

2. His reliance upon his comrades in the ranks.

3. His reliance upon his officers.

[1] This estimate includes numbers discharged by the several governors prior to muster in as well as those actually rejected by the examining surgeons.

If the soldier is untrained, or but partly trained, he is without that essential self-reliance; if his comrades are in the same situation, he cannot rely upon them; and finally, when he is led by partly or imperfectly trained officers, he can have no confidence in them. There can be in consequence no discipline, no training to act in accordance with rules. Training is absolutely essential to discipline and is the measure of military efficiency. Let us then examine the training of the National Guard, not that which it has had in the past, but that which it must have in the future.

Section 92 of the National Defense Act provides that "each company, troop, battery, and detachment in the National Guard shall assemble for drill and instruction, including indoor target practice, not less than forty-eight times each year, and shall, in addition thereto, participate in encampments, maneuvers, or other exercises, including outdoor target practice, at least fifteen days in training each year, unless such company, troop, battery or detachment shall have been excused from participation in any part thereof by the Secretary of War." The provisions of the act further require that a certain minimum, to be prescribed by the President, shall be present at each exercise, and that the duration of the actual military training at such exercise shall be at least one and one-half hours.

The total annual time required under the law for indoor training is therefore forty-eight periods of one and one-half hours each, or seventy-two hours. The training period at encampments, maneuvers, and outdoor target practice of fifteen days will doubtless include the time necessary for assembling and moving to the place of encampment and returning therefrom, each of which operations will consume at least one day. Sundays will be days of rest, and at least one Sunday will be included in a two weeks period. The maximum number of days on which actual military training will take place will therefore not exceed twelve. If we assume that eight hours will be spent on each of these days in actual military training, an assumption that is believed to be greatly in excess of the actual time, the total time spent annually in field training will be ninety-six hours.

Extending this training over the three years that a National Guard soldier passes on the active list of the guard before being furloughed to the National Guard Reserve, we find that he will have had not to exceed two hundred and sixteen hours of indoor training and two hundred and eighty-eight hours of field training, a total of five hundred and four hours. It must be remembered that these are maximum figures, that they will never be attained by organizations, and only rarely by individuals. It is probable that

the average training period of the individual soldier when he has finished his active service and been furloughed to the reserve will not have exceeded two-thirds of the maximum, or about three hundred and thirty-six hours, and that the average training period per soldier on the active list will be less than half, or two hundred and fifty hours.

Thus we expect to produce a trained and disciplined soldier with a possible maximum of training of five hundred and four hours, and a probable training of about half that amount. Can we make soldiers in this way? Let us see what is being done in the principal foreign armies in this respect.

Germany, with her magnificent war organization, and under the stress of a war for her very existence, does not place her recruits in the firing line until after they have had six months of intensive training at from eight to ten hours per day, or a total exceeding sixteen hundred hours. The instruction is thorough and is given by thoroughly competent officers and noncommissioned officers.

Even then these raw troops are not sent to the front as integral organizations, but are fed by driblets into the veteran regiments to fill the gaps caused by losses. The spirit of the recruit is thus animated and assisted by the example of the veteran by whose side he fights.

England, from whom we have derived our volunteer system, has, within the past two years, raised an army, at first by voluntary enlistment and later by conscription, that has been variously estimated at from three to four millions of men. Her military situation was, at the outbreak of the war, so similar to our own that her experience should be carefully examined.

We have seen that, for a long period of time, the British troops in France occupied only a tithe of the long line of trenches from the North Sea to Switzerland, and many had come to the conclusion that England was not doing her part. Few were able to penetrate the situation and arrive at the true solution of the problem.

Lord Kitchener, with his superknowledge of the capacity of raw troops, was unwilling that new and untrained levies should be sent to battle in the trenches against the disciplined troops of Germany. They would suffer appalling losses without making commensurate gains, and there would always be present the fear that, by their failure to hold the line, it might be broken by the enemy with disastrous consequences to the Allied cause.

The firm decision was apparently formed to withhold the new troops until their training and organization should be completed, and the best information obtainable tells us that the minimum period considered sufficient for that training was

a year, or approximately sixteen hundred hours, of intensive training.[1] It must be remembered, however, that, after her small regular army was virtually annihilated in the early part of the war, Great Britain found herself practically without professional instructors for her new troops, a circumstance which prolonged the essential training period to a considerable degree.

Switzerland, whose small but efficient militia army has been frequently held up to us as a model for our own, commences the gymnastic training of her boys in the primary schools. True military instruction follows close upon the gymnastic training, with instruction in the use of the rifle. The many shooting societies, supported and patronized by the government, teach the youth his marksmanship.

When at last, at the age of twenty, he is conscripted and presents himself for service with the Elite, as the active army is designated, the recruit is more than half a soldier; he has had excellent physical training and he is a marksman.

Even with this previous training, the time that the new conscripts must pass in the recruit school is sixty-five days for infantry and longer periods for the other arms. The work is intensive, and the soldier undergoes instruction for from eight

[1] Materially reduced when a thorough organization and the assignment of slightly wounded officers and men from the front rendered consistent and properly directed training possible.

to ten hours per day. Excluding Sundays, which are rest days, the recruit receives actual training for more than four hundred and thirty-two hours on consecutive days, while the instruction is continuous and progressive in its character. During subsequent years he must serve annually for fifteen days with the colors until he passes out of the Elite into the first reserve. These fifteen days, moreover, are passed in actual military service, and not in going to and returning therefrom. The annual period thus passed is about one hundred and twenty hours, and the total instruction period in the first three years, which corresponds to the instruction period of our National Guard, is six hundred and seventy-two hours.

In 1915 Swiss General Staff officers informed the writer that, as a result of their experience in guarding their frontier in the present war, the period was generally considered by the General Staff too short for the maintenance of the desired military efficiency, and that it was the general impression that it would be increased.

With the actual experiences of these foreign nations before us, can we blind ourselves to the fact that the period required of the National Guard is entirely too short and the training too spasmodic to produce a soldier fit to meet trained troops in battle? That in consequence of lack of training our National Guard is undisciplined and inefficient?

The condition is illustrated by the situation of the National Guard on the Mexican border at the present time. The privates are poorly instructed and disciplined and consequently a greater amount of work is thrown upon the noncommissioned officers; the latter are poorly equipped for their duties at best, and their inability to perform these duties with efficiency, especially in view of the overload caused by the inefficiency of the private soldier, causes undue work to be thrown upon the officers. The result is discontent, and general lack of efficiency, newspaper reports to the contrary notwithstanding.

The material throughout is excellent; the men are willing and anxious to attain efficiency; the officers are honest and painstaking. But they do not know how to attain good results and their efforts are vain and discouraging.

Second, the reliance upon volunteers to fight our battles is closely connected with our national life. All of our wars have been largely fought by volunteers, and it is the popular belief that by this means we can always solve our military problems.

There is no doubt that, at the outbreak of actual war with any nation whatsoever, the number of volunteers that would present themselves will far exceed that which we could at the time equip and train. However, such volunteers come to the front *after* the crisis of war is upon us, and

at a time when we need, not raw material, but the finished product, the trained and organized soldiery. They cannot be first-line troops, as they will totally lack both training and organization. As has been definitely demonstrated by the experience of foreign nations, they cannot be relied upon as first-line troops until after at least six months, or even a year. War volunteers are always too late, and until they can be prepared to play their part, the first line must be held by the regular army and the National Guard.

The requirement of the National Defense Act (Sec. 62) is that within one year after the passage of the act the enlisted strength of the National Guard shall be equal to or exceed two hundred men for each Senator and Representative in Congress (a strength exceeding 100,000 men), and that it shall be increased annually by 50 per cent until the total equals or exceeds eight hundred men for each Senator or Representative (a total strength of approximately 440,000 officers and men).[1]

The maintenance of the National Guard at a constant maximum of 440,000 officers and men will require the extension of the volunteer system on a large scale in time of peace, in order

[1] It is a curious fact that there is no provision for making the entire increase of the National Guard at once, should an emergency require it, and that at the present time a material increase in the military force could be made only by raising the regular army to maximum strength and by calling out volunteers.

that the units may be kept at the prescribed strength and ready for service at all times, and that an adequate reserve may be built to fill the organizations to maximum strength should the emergency arise that would require it.

The only index that we have of the possibility of attaining and maintaining this strength is the experience of the organized militia during the past thirteen years, or since the Federal government extended its active assistance. This experience has taught us that the practical maximum that can be normally maintained is in the neighborhood of 125,000 men.

It is possible that the payment for services, even though the amount be small, may attract a considerable number of men. On the other hand, the strict requirements of the Federal oath, and the possibility of being forced into service, such as is now being rendered on the Mexican border, will doubtless deter others from engaging themselves in a contract that may seriously interfere with their business and family relations.[1]

It is difficult to form an estimate of what will actually occur, but it seems most improbable, in the light of experience, that the numbers provided for in the law can be attained by any system of voluntary enlistment.

[1] Since the National Defense Act has been in force inspectors report that very few organizations have enough men at the weekly drills to enable the pay to be given under requirements of law.

As has always been the case in our military history, it has been far easier to vote battalions than to raise them.

It may be interesting to note the experience of the National Guard in the mobilization for service on the Mexican border.

On June 18, 1916, the President issued the call for the mobilization of the guard. The emergency was acute, and the mobilization was expedited to the utmost. These are the results ("Everybody's Magazine" for October, 1916):

After ten days of maximum effort, the various department commanders succeeded in getting *just 12 per cent* of the men started for the border.

More than 30 per cent of the guardsmen were found to be physically unfit for service. Many of those who went to the border had never had a single day's training.

. . . . . .

A report to the Military Committee of the Senate indicated that 30 per cent of the men who went to the border had never fired an army rifle.

In September, 1916, three months after the call was issued, and after a strenuous recruiting campaign, a little over 150,000 men had been assembled, but many of the organizations of the National Guard were *still below the minimum strength prescribed for similar organizations of the regular army.* Of these it is credibly reported that only 30 per cent had previously belonged to the guard, and had had even partial

training. What would have been the result had it been necessary to send these men against a trained and organized enemy?

The principal disadvantage of the peace-time volunteer system in the National Guard must be recognized in the social and economic relations of the men themselves. They are of all military ages, from eighteen to forty-five years, and many of them, especially the older men, have contracted family and business obligations whose temporary abandonment or necessary neglect during periods of service operate to the prejudice of the soldier, his family, and his employers or business associates.[1]

The very fact of their withdrawal from our industries has an unfavorable effect both on the man and on the industry in which he is employed. His place must be filled by another, either temporarily or permanently; the man either loses his employment, or is carried on leave of absence, either with or without pay, for the period of his service. The industry loses its trained men for the time being, and the efficiency of the plant must suffer until the training of the substitutes has been completed.

The family considers that the first duty of the man is toward his home, the maintenance of par-

[1] Had the mobilization called for 1,500,000 men of the same class the interruption to the financial, professional and business interests of the nation would have resulted in a marked lessening of efficiency at a time when increase in efficiency is imperative.

ents, or wife and children. The moment the family income ceases, and the pinch of poverty is upon them, pressure is brought upon the soldier to obtain his release from military service. He either does so, or remains in the National Guard a discontented man, more an element of disorganization and indiscipline than anything else. The necessity of relief, either governmental or private, for the families of soldiers during the recent mobilization, fully attests this disadvantage, which cannot but influence unfavorably the efficiency of the troops.

The lists of resignations of officers of the Guard[1] that have been published almost daily in the press show how soon those who can withdraw leave the service to return to business or profession, while thousands of applications of enlisted men for discharge testify to the need of them at home or to their disinclination to serve the country in anything further than a summer's jaunt.

What would be the situation were the emergency a serious one, with the life of the nation at stake?

Third, the intrusion of the States into military affairs.

The National Guard is primarily a State force, and the hold of the Federal government upon

[1] Total resignations of officers to include December 31, 1916, 657.

that force is solely through its subsidies in the way of appropriations, and upon its members through the Federal oath that must be taken by them in order that they may be recognized as National Guard. The only punishment to a State for noncompliance with the Federal law in regard to the organization is the withdrawal of its participation in the appropriations. If the National Guard of a State fails to fulfill the requirements of the statute, it ceases to be recognized by the Federal government and the hold of the latter upon its members is lost.

The officers are State officers, appointed, when the guard is not in the service of the United States, by the respective governors, though, in order that they may be recognized by the Federal government as National Guard officers, they must fulfill certain Federal requirements as to mental, moral, and physical fitness. Even though they be recognized by the Federal government and receive Federal pay and emoluments, they are nevertheless primarily State officers, beholden to the State officials for their positions in the service.

The influence of the States in military affairs during the Civil War was not only prejudicial, but actually pernicious. State agents pervaded the camps, the lines of communications, and the hospitals. Their influence was felt in every department. The assignment of general officers to

command, the promotion and assignment of other officers regardless of merit or of anything but their political influence, the disposition of the enlisted personnel, were all affected by their activities. Through their efforts, thousands of slightly wounded men, of the sick, and even malingerers, were enabled to return to their homes, and thereafter to evade compliance with their military obligations, though all disability had passed.

It is a striking fact that, largely through this influence, the absentees from the Union army that fought the battle of Antietam exceeded the strength of the troops that participated in the battle. The total in action was but 87,164, whereas the absentees numbered 101,756. What might have been the result of the battle had even half of these absentees been with the colors during the battle?

This is but one case; our military history shows many that are fully as striking. For this frightful absenteeism, General Upton holds the State authorities largely if not entirely responsible.

Every effort on the part of the military commanders in the field to ameliorate the conditions was met by resistance on the part of the State authorities, and strong political pressure was usually brought to bear by the latter to carry out their plans regarding the forces from their respective States.

The same situation must be expected in any case in which the National Guard is taken into the service of the United States, or in which its members are drafted. As long as the dual authority exists, and the members of the institution owe a divided allegiance, interference on the part of the State authorities will occur, and it will always be to the prejudice of true military efficiency.[1]

The contrast of the policy of the Confederacy in this respect is enlightening. The South early realized that strong central authority was necessary, resorted to compulsory service, conducted the war as a nation instead of as a loose confederacy, and was thus able, with materially inferior resources, both in men and materials, to prolong for four years a war that should not have lasted two had the North adopted an effective military policy.

The governor of a State may still refuse to respond to a call for the National Guard of his State, as was done by two governors in the War of 1812, and by six Southern governors at the outbreak of the Civil War. Though it is impossible to think of such a thing being done again through a spirit of disloyalty, circumstances might arise in which the governor might think

[1] In the recent mobilization much of the time and energy of those charged with the problems of administrative organization and supply was given up to special individual cases at the urgent request of Senators and Congressmen.

himself justified in retaining the troops for the defense of the State itself, putting the local ahead of the national defense.

There are still forty-eight minor War Departments, each vested with material authority over the State troops. Federal authority can in consequence be only partially effective, and, as set forth by General Upton, the system operates as though we were a confederacy instead of a nation. The Federal government has imposed requirements on the National Guard which it must fulfill in order to share in the appropriations, and to that extent is able to control it. But, outside of the possibility of coercing a State in this respect by the threat of withholding the appropriations, the authority of the United States over the guard is almost nil. The States possess the real authority, and, if they do not cooperate with the Federal authorities, especially in the matter of recruiting and administration, the troops will disappear.

Military authority in war is despotism. To attain the ends for which it is invoked, it must be centralized and supreme. Federations have generally failed in war when opposed by strongly centralized power. To attain the military efficiency that makes possible the conduct of war to its successful conclusion at the minimum cost in blood and treasure, there should be but one head, one center of authority. Otherwise we risk de-

feat, or at best gain our military ends, as we have done in the past, at the highest cost.

The National Guard, like all militia, can be used, under the provisions of the Federal constitution, solely to execute the laws of the Union, suppress insurrections, or repel invasions. As long as it remains militia, the organizations or the members thereof can deny the right of the United States to use them for any other purpose, however necessary that purpose may be. It was so at Queenstown in 1812, where the militia refused to cross the Niagara River to support their comrades who had seized the heights, and left them to be destroyed or captured by their British antagonists, thus turning what promised to be a brilliant success into a disastrous repulse. Can it not be so again, under similar circumstances? It may not be, but we have done nothing to prevent a repetition of such an occurrence.

We have, to be sure, a provision for drafting the National Guard into the Federal service, but this provision does not and cannot draft organizations. It drafts only the individual members, who from that time stand discharged from the National Guard. The units must then be reorganized in the Federal service, as their former organization has been nullified by the draft. Likewise, the methods of recruitment must be changed, as the depot battalions provided for the National Guard in war depend upon the usual

volunteer enlistment, and the mechanism for conscription would have to be constructed, as none of it would exist at the time of the draft.

The drafting of the National Guard means therefore the complete subversion of the system as it exists in peace, first, a disorganization, and then a reorganization. Will time be ample for such a process, after war has been declared?

To sum up the conditions as they exist to-day, we find as follows:

1. The National Guard depends entirely upon the volunteer system, instead of using conscription, if necessary, in time of peace, to keep its ranks full, and it is therefore a matter of extreme doubt whether the required numbers can ever be maintained.

2. It cannot be efficient, as the training period, for both officers and men, is only a fraction of that found by experience to be absolutely necessary to produce the trained and disciplined troops that are required for the first line of defense.

3. State authority weakens Federal control in an emergency, and interferes seriously with correct military centralization. A State may still refuse a call for its National Guard.

4. Mobilization through State agencies is slow and ineffective.

5. The National Guard as such can be used only as militia, "to execute the laws of the Union, suppress insurrections, and repel invasions."

6. To become a real military instrument for all the purposes of the Federal government, it must be drafted into the service of the United States, thereby losing its identity and organization, and must be reorganized.

All of these conditions tend toward ineffectiveness, and none toward efficiency; all bespeak a repetition of our costly militia-fought wars, none give the assurance of a systematic, centralized conduct of war; all foretell disaster in a serious war with a major power, none give us the comfort of even probable successful defense.

Having for more than a hundred years relied upon a system that has always failed, has always been costly in men and money, and that presents to us, under modern conditions, the almost certainty of disaster if employed against a powerful, well-organized nation, the time has finally come when we must decide to discard it, and to adopt the only possible means that will prepare us for successful defense against any nation in the world, which is universal and compulsory military service.

VII

A Proper Organization

THE primary object of organization for defense is the complete coordination of all the elements of our military power in such a manner that they will form a single defensive machine, each part of which can work in complete harmony and cooperation with every other part.

The defense of our territory, and more especially that of our outlying dependencies, commences on the sea, and is naturally a function of the navy. If the navy is defeated and destroyed, driven in and blockaded in our protected harbors, or forced to take refuge in neutral ports, where its vessels will be disarmed and interned, it bequeaths its duty of defense to the land forces. which cannot operate beyond the shore line.[1]

It would seem that these successive duties are separate and distinct, and that, in combating invasion on the high seas, the navy discharges its full duty, which terminates when it can no longer keep the sea.

[1] The second most powerful navy of the world has been held in harbor almost helpless during the present war.

However, the contrary is actually the case, due to the modern developments of methods of warfare, and more especially due to the peculiar conditions of the problem of our defense. The functions of navy and army are interdependent and correlated.

To be sure, the maintenance of the command of the sea is purely a function of the navy, as field operations are likewise functions of the army. Between the two is the coast defense, including the coast patrol, coast-guard service, the communication by wireless between sea and shore, and combined operations involving the transport of troops by sea.

In such cases the regulations of both army and navy vaguely require *cooperation,* without defining what this cooperation shall be.

In general, it is left to the commanders, and the resulting cooperation is largely dependent upon their personal and official relations. Should both be tactful, they may attain a compromise that will produce the desired results. Should they fail to agree, and, as they are human, it is only natural that such should often be the case, coordination of effort cannot be hoped for. They serve under independent bureaus of the government, and neither can command the other.

Essentially, therefore, this is not organization, but disorganization, and it begins at the fountainhead.

This disorganization extends downward throughout our services. Questions constantly arise regarding coast-patrol service, mine planting, the wireless service, aircraft, and other matters, as to whether they properly pertain to the land or naval service.

There is no coordination in matters of armament and equipment. Calibers of guns, ammunition, and methods of fire are not uniform. If the individual arms and equipments of certain of the forces happen to be the same, it is merely because they have been found by entirely independent means to be the most satisfactory.

There is nothing whatever to bring the army and navy together, save mutual good will and the desire on the part of both to serve the country honestly and faithfully, and no force, except the personally imposed will of the commander in chief exerted through the two members of his cabinet who are the actual heads of the services, that will exact cooperation between them.

As a matter of proper organization, this cooperation should exist *per se*, and should be one of the bases of that organization.

Instead of having two separate and independent departments for the two services, both of which are primarily intended for the defense of the nation, they should be united in one great Department of War.

A Proper Organization

One of the members of the cabinet of the President should be war minister, and in charge of this department, with a staff composed of officers selected from both services.

The command of the army and navy would thus be united under one executive head. The arms of the service would be governed by regulations common to both, and harmony in organization, equipment, and tactical cooperation would be assured.

A proper staff of officers selected from both services, working under the direction of a common chief alone can solve the mutual problems in such a way as to secure unity of effort in all respects.

Under the war minister should be included the two subdepartments, that of the army and that of the navy. These subdepartments, organized along the lines of the present War and Navy departments, may specialize along the lines of the respective services, both striving to attain efficiency in the corresponding branch, but united and coordinated from above in such a way that harmonious cooperation results whenever they are brought together for a common purpose.

In other words there should be a General Staff for the army, a General Staff for the navy, each supreme in its branch, but above both should be the Great General Staff serving directly under the minister for war.

National Service Library

Proper organization of the military forces of the United States depends upon our national policy, which, up to the present time, has never included what might be termed a real military policy.

Our military affairs have been conducted on a basis of opportunism; only the forces indispensable for the immediate needs of the Federal government have been maintained. At times even the needful forces have been lacking.

At the same time our national policy, dictated by our increasing foreign commerce, has been one of expansion, extending our influence to all parts of the world. Such a policy must sooner or later come into conflict with that of some other of the great commercial nations of the earth, and, if we are found unprepared, we shall be obliged to recede from our advantageous position or fight; and if we fight, in a state of unpreparedness, we must lose.

We have always trusted to good fortune to carry us through any emergency, national or international, and, strange to say, our good fortune has thus far never failed us.

We have had wars, and they have in some cases been long and costly, but we have emerged from them without loss of national prestige.

These facts have led us to the erroneous conclusion that we shall always be able to meet a serious crisis as we have done in the past; and

that our "splendid isolation" will always give us time to prepare for war before a serious blow can be dealt us by an enemy.

They have caused us to lose sight of the fact that all of our wars have been unduly prolonged and have been made costly in men and treasure by our unsystematic and ineffective methods, due to our lack of a definite military policy, and especially due to our employment of raw levies, commanded by amateur officers, that have been hastily raised after the crises were upon us.

We forget that we are still paying a heavy price for the Civil War in the huge amounts disbursed annually in pensions, and that we have hardly yet commenced to pay for the war with Spain.

The conditions of war no longer admit of the easy-going methods that we have hitherto followed. The great powers of the world are now organized for war to an unprecedented degree, and it is folly to believe that, after having realized to the fullest extent the value of preparedness, they will ever revert to the condition in which the outbreak of the Great War found many of them. One of the most valuable lessons of the war has been that of national organization, and it has been so cogently impressed upon the belligerent nations that it will probably never be forgotten or neglected.

Hereafter, when one of these nations strikes, the blow will be sudden and will be directed with

its full military strength. Initial advantage may mean the winning of the war.

The rapidity of the initial stroke is now facilitated by the rapid ocean transport of modern times.

The conditions in Europe have rendered it practically impossible at the present time to estimate the size of an expeditionary force that we might in future be called upon to meet. During the continuance of the war, such an expedition from European shores may be regarded as not only improbable but impossible; the great nations are too closely engaged. After the war, when political equilibrium will have been restored, we shall again be able to reasonably estimate the military power that we might have to meet, but that time is yet apparently far removed and is too late for our purpose.

From some quarters of the public press, and from speeches of certain public men, especially of the pacifist class, we hear that the belligerent nations will emerge from the war ruined and exhausted, incapable of making war for many years.

Those who advance this belief either repudiate, or are ignorant of, the facts of our own history. They forget that the epoch at which we were strongest as a nation, in the military sense, was just at the close of the Civil War.

Evidence of this fact is not wanting, but it is not written in the annals of war, for the simple reason that our preparedness at that time rendered a foreign war impossible. The prompt withdrawal of the French troops from Mexico, on the demand of Secretary Seward, in 1866, clearly shows the regard in which our military strength was held by Napoleon III.

As we were at that time, so will the European nations be at the close of the present war, economically ruined, but strong in possessing powerful veteran armies, thoroughly organized, and commanded by experienced leaders.

Since we cannot form an accurate conception of what may be expected in the future, we must still base our estimates as to the possible forces that we may have to meet, in the data obtainable in 1914. Studies made of these data in the Army War College have developed the table showing the preparedness of the Great Powers for oversea expeditions (see page 190).

These figures form the basis upon which our defensive preparations must be calculated. We must be prepared to meet a maximum invading army of 387,000 men, with a reenforcement within a month of 440,000, a total of 827,000 men.

To repel successfully such an invasion, it has been estimated that we shall need at the outset at least 1,000,000 men.

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PREPAREDNESS OF THE GREAT POWERS FOR OVERSEA EXPEDITIONS

Nation	Strength of army	[3] Tonnage available of ships with capacity over—			First expedition using 50 per cent of tonnage given		Second expedition using 75 per cent of tonnage given		Time needed to—	
		3,000 tons	2,000 tons.	1,000 tons	Men	Animals	Men	Animals	Load and cross ocean with first expedition	Return, load, and recross with second expedition
									Days	Days
Austria-Hungary.	4,320,000	.....	762,756	.....	72,000	14,000	108,000	21,600	20.7	40.4
France.....	5,000,000	.....	1,705,931	.....	160 931	32,186	243,295	48,279	15.8	30.0
Germany	5,000,000	3,569,962	4,018,185	.....	[4] 387,000	[4] 81,270	[4] 440,000	[4] 94,600	15 8	30.8
Great Britain....	[1] 695,000	13,000,000	.....	.....	170,000	90,000	.....	.....	14.0	27.0
Italy.....	2,600,000	.....	1,065,321	.....	91,000	13,650	136,000	20,475	18.3	35.0
Japan.....	2,212,000	.....	.....	[2]1,013,985	95,745	24,416	142,622	36,623	22.5	41.0
Russia	5,000,000	.....	428,019	.....	37,630	7,940	66,444	11,918	20.5	40.0

[1] 240,500 territorials. [2] Japanese field regulations indicate the intention to use steamers of 1,000 tons; for this reason and because of the large amount of steamers between 10 and 12 knots speed, all Japanese steamers over 10 knots speed and a thousand tons gross have been considered. [3] Fifty per cent has been assumed as the figure representing the amount of shipping in or within call of home ports at outbreak of war. [4] Using no ships less than 3,000 tons. Note.—The allowance prescribed in our Field Service Regulations of 3 tons per man and 8 tons per animal for ships over 5,000 tons and 4 tons per man and 10 tons per animal for vessels under 5,000 tons has been used in estimating the capacity of ships, except where the regulations of any country prescribe a different allowance. These allowances include rations, water, forage, etc., for the voyage and a margin for three months' reserve supplies. The tonnage allowance covers men, animals and all accessories and is sufficient to provide for vehicles, including guns. Fighting power is the result of organization, training, and equipment backed by the resources of the country. Available shipping is a matter of statistics.

A Proper Organization

Our military question is therefore, how these men are to be obtained.

Our national prejudice is against the maintenance of a standing army of such proportions, and its cost would be well-nigh prohibitive. Moreover, the raising of such a force by voluntary enlistment, such as has hitherto been the method employed in recruiting our regular army, is practically impossible, as competent authority has stated that the maximum that can be constantly maintained in this manner is in the neighborhood of 150,000 men.

The National Guard must be regarded as a failure, for reasons heretofore given, especially in view of the fact that it is evidently impossible that the necessary numbers could be attained.

To place our dependence on raising volunteers when the crisis is upon us is to invite disaster. We might raise the men, we might even organize and equip 1,000,000 men, but we should not have an army.

It would not even be a well-balanced force. Such troops as we might then raise would be largely infantry, or so-called infantry, for the infantry soldier needs training as much as any other arm. Cavalry, field artillery, engineers, signal troops and aviators, all the troops which require special or technical training and equipment, would be lacking, though the present war

has demonstrated the absolute necessity for them in increased proportions. Above all, the time would be so short that, before any volunteers could be assembled, the enemy would be upon us.

The only other method to which we can resort, and the only one that promises the adequate defense that we require, is a force raised and maintained in time of peace by compulsory universal service.

As against any other military system, this method of raising troops has everything to recommend it. Let us review some of its advantages.

1. It takes all young men at the age at which they become subject to military service.

The only members of the eligible class that would escape service are the physically unfit, the mentally unsound, those upon whom fall the support of dependent parents, or those whose employment is as essential to war as to peace, such as railroad and telegraph employees.

2. All men will enter service at the same time and their training will be consequently systematic and economical.

One of the difficulties of the regular army, and one that has likewise been experienced by the National Guard, has been due to the constant recruiting that must be carried on to keep the organizations up to the prescribed strength. Small parties of recruits are constantly joining

all the regiments from the recruit depots. In consequence, part of the men are thoroughly trained, others but partially, while there is always a fair percentage of raw recruits who must undergo the elementary drill before they can be incorporated into the ranks of the command.

This condition disappears when the service is compulsory. All recruits enter the service at the same time, and the state of training of all is approximately the same at any period.

Training and organization are thus simplified, with the greatest economy of time and effort. A smaller number of instructors can produce results, as one man can handle a greater number of men.

3. It inculcates the highest sense of citizenship. It is the duty of the citizen to support the government to which he owes allegiance, and from which he receives protection, not only by the payment of taxes, but also by personal service, even to the sacrifice of life itself.

Our government under the constitution has been so invisible that we rarely stop to reflect that we are governed, and that the real government resides in the great body of our citizens. It is in their behalf, in order that they may enjoy the rights of life, liberty and the pursuit of happiness, that it becomes essential to maintain a military force.

The man who has performed his military serv-

ice will be more prone to realize his obligations as a citizen, and to properly appreciate the rights and privileges that he enjoys under the government, than one who knows only the rights and privileges and recognizes no obligation in return.

4. It is the most democratic form of military service. The burden falls alike upon the rich and the poor, the willing and the unwilling. None escape but the unfit, those whose service is the same in peace and in war, and those among the poor whose family obligations require presence at home.

The service is honorable, as all must serve alike. The son of the wealthy director or stockholder of a corporation must serve shoulder to shoulder with the son of the carpenter. Caste is buried in the military obligation. They live together in camp and cantonment, and their daily association and exchange of views may be of the greatest value in later years in the amicable solution of many of the difficult social and economic problems that confront us.

Such an army would be truly a *national army*, the trained and organized citizenry that has been described to us as the ideal for a republic.

5. It is based upon sound economic principles. The young man of twenty years or less, though he is of high potential value in our economic life, has a lower present value than the more mature man, within the limits of liability for military

service. He is not yet definitely settled in a trade or profession, has fewer liabilities to tie him to his home, and can consequently be more easily spared from the office, the factory, or the farm. At the same time, the older man, who has acquired experience and skill in his work, and has become part of the industrial system to which he belongs, can be less easily spared from our economic life in time of war than in time of peace.

Modern war demands industrial organization to the same degree that it demands military organization. Our industries must produce not only what is usually required of them in time of peace; they must be prepared at once to produce the excess demanded by war. Munitions, equipment, and all sorts of military supplies must be furnished in addition to the normal output of our industrial plants. War is wasteful, and the waste must be supplied.

Therefore, the indiscriminate withdrawal of men of all military ages from our industries, in order to form them into battalions, as has been the practice under the volunteer system, is not only uneconomic; it is actually prejudicial, as it diminishes our productive power at a time when a material increase is demanded by the conditions of war.

Were we to adopt the policy of universal compulsory military service, we should have annually available for training almost a million young

men. Deducting from this number the physically unfit, and those who may reasonably be exempted from service, it is estimated that there would remain at least 600,000, who could be placed under training and from whom our national army could be organized.

These 600,000 could be taken at some period, say after completing their nineteenth or twentieth year, and trained for the period of a year, which has been found to be about the shortest possible time in which an effective soldier can be produced.

After completing their training, they would become reservists, subject only to periodic calls for training, and to service in time of war.

With such a system in operation we should be able, within a short period of years, to obtain a first line of fully 600,000 men, exclusive of the regular army, together with trained reserves amounting to several millions, and these could be rapidly organized to create the second line behind the first.

Having in view the establishment of universal military service, let us examine our military problem and see whether or not the forces we can thus command will fulfill its requirements.

1. We must be prepared to defend the United States, and to repel an invasion of nearly 400,000 men in a first expedition, with a second within a month of approximately 450,000 men.

2. We must furnish adequate garrisons for our oversea dependencies, consisting of Alaska, Hawaii, the Philippines, Guam, the Panama Canal, Porto Rico, and the recently acquired Virgin Islands.

It is evident that a national army under universal compulsory service, supplemented by the regular army, will fulfill the requirements of the defense of the United States. It would be raised and maintained within our continental limits; its reserves would be within the same area; and the resources of the entire country would be available to furnish it with supplies and munitions.

Such, however, would not be the case with our oversea dependencies. In the first place, the garrisons required for their defense are entirely disproportionate to the white American population, and would therefore have to be drawn from the United States. In the second place, these garrisons must be at all times on a war footing, both as to numbers and training. There can be no interim during which the entire strength is composed of raw troops undergoing elementary instruction. It would also be inconvenient, undesirable, and expensive to replace these garrisons annually with the entrance of each new class into the national forces, and the passing to the reserve of those who have completed their active training.

Furthermore, one of the essentials of the universal service system is that the troops be maintained in the area in the vicinity of their homes, and it would be inexpedient to utilize them for foreign garrisons.

It becomes evident, therefore, that these oversea garrisons must be composed of troops of longer service and higher training. Regular troops alone fulfill these requirements.

As it is inexpedient to keep troops continuously on foreign duty, a fair proportion of regular troops should also be maintained at home with a view to periodically relieving our oversea garrisons and replacing them by fresh troops from the homeland. Such a force of regulars is also needed at home for the performance of such emergency duty as has so frequently fallen to the lot of the regular army.

It furnishes the regular troops for service such as is now being rendered on the Mexican border, relief work in fire, flood, and earthquake, and, as the regulars are ready for service at all times, for the preliminary measures of defense during the mobilization of the remaining national forces.

The size at which the regular army should be maintained can thus be readily computed. The necessary oversea garrisons have been estimated by the War College Division of the General Staff as in the following table:

TABLE OF GARRISONS FOR OVERSEA SERVICE

Localities	Regiments of—				Signal battalions	Aero squadrons	Coast artillery troops
	Infantry	Cavalry	Field artillery	Engineers			
Philippines	9	3	3	1	1½	1	2,900
Hawaii (Oahu)	9	1	2	1	1½	1	1,600
Panama	9	1	1	1	1½	1	2,400
Alaska	1	..	..	..	...	..	....
Porto Rico	1	..	..	..	...	..	....
Total	29	5	6	3	4½	3	6,900

Approximate total of troops:

Infantry	58,000
Cavalry	7,500
Field artillery	7,800
Engineers	3,300
Signal troops	1,100
Aero	450
Coast artillery	6,900
Total	85,050

Note: These numbers have been somewhat changed from the original estimate to fit them to the present organization of troops.

In this estimate it is believed that the total is approximately correct, but that the distribution may be well subject to change. Too great importance is placed upon the Philippine Islands, whereas too little has been attached to our two most important outposts, the Panama Canal and Hawaii. The loss of the Philippines would involve little more than a loss of prestige and the partial loss at least of our share in the future development of the Orient with its great commercial potentiality, whereas, the loss of either Panama or Hawaii would be a serious and possibly a fatal blow, as both of these possessions are of great strategical value, either for or against us.

Any garrison that we might place in the Philippine Islands, short of four full tactical divisions (112,000 men), would be insufficient for their adequate defense. Such a force is out of all proportion to the importance of the islands, and is economically out of the question. In consequence, the garrisons of the Philippines should be the minimum consistent with the maintenance of our sovereignty in time of peace, together with the retention in war of some important point until, by regaining the command of the sea, we may be able to take steps toward the reconquest of the islands.

On the contrary, since Panama and Hawaii are of the greatest importance to us, both strate-

gically and economically, and the loss of either would be seriously felt, no effort should be spared to defend them to the utmost, and both should receive large garrisons.

Alaska and Porto Rico are of value to us economically, but not of great strategic value. Their complete defense would require large forces, and it is probably wiser to provide a small garrison for each of them for the purpose of maintaining our sovereignty at some point within their borders, and to trust to hold them in the end by winning the war.

Guam is as yet an unknown quantity. It may be made strong if we require it as a naval base, but such a base would be necessary only in case we should adopt an aggressive military policy, and, at the present time, the probability of the adoption of such a policy is very remote. Should we decide that the retention of our interest in the commerce of the Orient is of vital importance, Guam presents to us all the favorable conditions of an impregnable naval base, a Gibraltar of the Pacific, and it should then be fortified.

To sum up, we shall need for service in our overseas dependencies at least 85,000 regular troops.

For home service, to relieve the foreign garrisons at stated periods, to reenforce them at the outbreak of war should the condition permit,

and to perform the emergency service that falls to the lot of the regular, at least an equal number of regular troops should be maintained. However, while the oversea garrisons should be kept at maximum strength at all times, there is no such necessity in the case of the home troops. Their reserve will be quickly available, and for the same numbers in time of peace we may have more organizations, at minimum strength, so that expansion to the maximum at the outbreak of war will be easily feasible, while it is economically desirable.

The overhead charges of a force maintained at minimum strength are comparatively greater than the same numbers with a smaller number of organizations at the statutory maximum, but such a force has the desirable advantage of containing a larger proportion of trained officers, and trained officers are scarce and difficult to obtain after the emergency requiring them has supervened. We must remember the enormous advantage to Germany of her numerous corps of trained officers at the outbreak of the present war.

Thus, with the regular army organized as now provided for by the National Defense Act, we may have approximately 85,000 men on foreign service, and maintain those at home on such a footing that they will total, including all arms and branches of the service, about 100,000 men

in time of peace, with a possible expansion for war, through calling in reserves, to nearly 200,000, giving a war total of about 285,000 men.

Staff Organization

Our Staff Corps and departments are properly organized under the law. The only need is that provision be made for automatic increase or decrease to correspond to the numbers of troops that they must serve. If a staff department contains the necessary numbers of officers and enlisted men to properly supply an army of twenty divisions, and the organization of twenty-five is provided for, it is immediately apparent that an additional force must be authorized, or that the administration of that department will be inefficient. On the contrary, should the number of divisions be diminished, there will be an excess of personnel in the staff department.

The Staff Corps and departments are now separate entities, each following its course independently of the others. The organization is in this respect defective. It can be remedied by the formation of a council of the heads of the several corps, under the presidency of the Chief of the General Staff.

With such a council, meeting at stated periods, the work of the corps and departments can be coordinated, duplication of work and interference can be avoided, and teamwork, which has

always been lacking in our staff administration, much to its detriment, may be attained.

This council should consider all matters of supply and apportion to each department its proper share of the work of supply, ever holding in mind that a supply department is the servant of the army, and not one of its directing agencies.

The General Staff Corps

One of the pressing needs of the military service at the present time is a large and well-organized General Staff Corps. This corps is the selected coordinating body of a well-balanced army, and as such should be ample in numbers and endowed with sufficient powers to perform its proper functions.

At the present time, it is *neither sufficient in numbers nor properly organized.* It consists of a few overworked individuals with practically no organization. Even the selection of General Staff officers is unsystematic and unscientific.

The present method of selecting General Staff officers, by a board of officers of high rank, produces a purely personal selection. The efficiency record of the officer and personal acquaintance are the only qualifications for eligibility that can be considered by the board. Our efficiency records have been in the past notoriously perfunctory, and many an officer whose service has been comparatively indifferent can boast of an

excellent official record. Personal acquaintance becomes proportionately narrower as the size of the military establishment increases.

We are now the only great nation in which the General Staff is not the subject of the keenest competition among the officers of the army, and it seems time to place the selection of officers on a scientific basis.

We have our service schools, especially the Staff College and the Army War College. The officers who graduate from these institutions have been specially trained in the duties pertaining to the General Staff.

It is therefore believed that the time has arrived when one of the requisites for selection as a member of the General Staff Corps shall be graduation from one of these institutions, coupled with the recommendation of the faculty of the corresponding college for such selection.

With regard to the organization of the General Staff, we have only to follow the model of any one of the great powers, whose General Staffs have at the present time stood the test of war, and have merged from the test with honor.

Studies have been made of General Staff organization in our service, based upon those of the great foreign powers, and furnish models that would place our General Staff on a proper footing.

The organization[1] which has been proposed by the War College Division of the General Staff conforms in all respects to the organization of the corresponding body in the military service of practically all the great powers, and, if adopted, would enable our General Staff Corps to properly fulfill the important functions that have been assigned to it by law, or that belong to it from the nature of its constitution.

Organization of the General Staff

This organization, as outlined in the tables on pages 208-9-10-11 following, contemplates that five general officers, namely, one Chief of Staff and four Assistant Chiefs of Staff, be assigned to duty with the General Staff in Washington.

The Assistant Chiefs of Staff are respectively in charge of the First, Second, Third, and Fourth divisions into which the General Staff is divided. The Chief of Staff and the four Assistant Chiefs of Staff to form a board of direction for the General Staff.

First Division: The First Division consists of five sections, namely, section of operations (war plans), section of organization and equipment,

[1] Certain modifications have been introduced into the original to bring the proposed organization into agreement with the present regular army, and the forces to be raised by universal service.

section of mobilization, section of training, and section of military information (study of foreign armies).

The section on operations would take the place of the present war-plans committee of the General Staff and would have general charge of preparing plans of offense and plans of defense to be used in event of hostilities. It would also be charged with determining the number of troops required to properly defend the United States from foreign invasion.

The second section—section on organization and equipment—would have general supervision and the drawing up of plans for the organization and equipment of the armies found necessary by the section on operations for the proper defense of this country. This section is divided up into subcommittees, each one of which is to handle the questions affecting the organization and equipment of their respective arms. The committee on communication and supply would handle all questions pertaining to organization and equipment of the troops of the lines of communication and supply.

The third section—section on mobilization—is divided into two committees, one of which would have charge of drawing up the plans of mobilization in accordance with the general principles enunciated by the section on operations of the regular army or first-line troops; another com-

PROPOSED ORGANIZATION OF THE GENERAL STAFF ON DUTY AT THE WAR DEPARTMENT

	Lieut. general	Major general	Brig. general	Co'nel	Lieut. colonel	Major	Capt.	Total
Chief of Staff	1	..	..	..	..	..	..	1
Secretary to Chief of Staff	..	..	..	..	1	..	..	1
Assistant Chief of Staff, chief of division	..	2	2	..	..	..	..	4
Secretary of division	..	..	..	..	..	4	..	4
First Division:								
I. Section on operations	..	..	..	1	1	2	1	5
Total for section	..	..	..	1	1	2	1	5
II. Section on organization and equipment—								
Chief of section	..	..	..	1	..	..	..	1
Infantry committee	..	..	..	..	..	1	1	2
Field artillery committee	..	..	..	..	..	1	1	2
Cavalry committee	..	..	..	..	..	1	1	2
Coast artillery committee	..	..	..	..	..	1	1	2
Technical troops committee	..	..	..	..	..	1	..	1
Communication and supply	..	..	..	..	..	..	1	1
Total for section	..	..	..	1	..	5	5	11
III. Section on mobilization—								
Chief of section	..	..	..	1	..	..	..	1
Regular army committee	..	..	..	..	1	..	1	2
National army committee	..	..	..	..	..	1	2	3
Total for section	..	..	..	1	1	1	3	6

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IV. Section on training—								
Chief of section	..	..	..	..	1	..	..	1
Infantry committee	..	..	..	..	..	1	1	2
Field artillery committee	..	..	..	..	..	1	1	2
Cavalry committee	..	..	..	..	..	1	1	2
Coast artillery committee	..	..	..	..	..	1	1	2
Technical troops committee	..	..	..	..	..	1	1	2
Total for section	..	..	..	..	1	5	5	11
V. Information section—								
Chief of section	..	..	..	..	1	..	..	1
Committee on France, Italy, Switzerland, Spain, Portugal, and Belgium	..	..	..	..	..	..	1	1
Committee on Germany, Austria, Holland, Turkey, and Balkan States	..	..	..	..	..	..	1	1
Committee on Russia, Norway, Sweden, and Denmark	..	..	..	..	..	..	1	1
Committee on China and Japan	..	..	..	..	..	1	..	1
Committee on South America	..	..	..	..	..	..	1	1
Committee on England and her colonies	..	..	..	..	..	..	1	1
Total for section	..	..	..	..	1	1	5	7
Total for First Division	..	..	..	3	4	14	19	40
Second Division:								
VI. Financial section—								
Chief of section	..	..	..	1	..	..	..	1
Regular army committee	..	..	..	..	..	1	1	2
National army	..	..	..	..	..	1	1	2
Reserve supplies	..	..	..	..	..	1	1	2
Total for section	..	..	..	1	..	3	3	7

PROPOSED ORGANIZATION OF THE GENERAL STAFF ON DUTY AT THE WAR DEPARTMENT—
Continued

	Lieut. general	Major general	Brig. general	Co'nel	Lieut. colonel	Major	Capt.	Total
Second Division—*Continued.*								
VII. Section on transportation—								
Chief of section	..	..	..	1	..	..	..	1
Atlantic coast committee	..	..	..	..	..	1	1	2
Mexican border committee	..	..	..	..	..	1	1	2
Pacific coast committee	..	..	..	..	..	1	1	2
Central States committee	..	..	..	..	..	1	1	2
Oversea transportation	..	..	..	..	..	1	1	2
Total for section	..	..	..	1	..	5	5	11
Total for Second Division	..	..	..	2	..	8	8	18
Third Division:								
VIII. Section—Survey—								
Chief of section	..	..	..	1	..	..	..	1
Atlantic States committee	..	..	..	..	..	1	1	2
Southern States committee	..	..	..	..	..	1	1	2
Pacific States committee	..	..	..	..	..	1	1	2
Central States committee	..	..	..	..	..	1	1	2
Total for section	..	..	..	1	..	4	4	9
IX. Section on printing and issue—								
Map-printing committee	..	..	..	..	..	..	1	1
Issue committee	..	..	..	..	..	..	1	1
Total for section	..	..	..	..	..	..	2	2

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X. Section on foreign maps	..	..	..	..	..	1	1	2
Total for section	..	..	..	..	..	1	1	2
Total for Third Division	..	..	..	1	..	5	7	13
Fourth Division:								
XI. Section—Educational—								
Education of general staff officers	..	..	..	..	2	2	..	4
Military schools, colleges, and universities committee	..	..	..	..	..	1	4	5
Total for section	..	..	..	..	2	3	4	9
XII. Section—Historical	..	..	..	..	..	1	2	3
Total for section	..	..	..	..	..	1	2	3
Total for Fourth Division	..	..	..	..	2	4	6	12
Total General Staff (War Department)	1	2	2	..	1	4	..	10
First Division	..	..	..	3	4	14	19	40
Second Division	..	..	..	2	..	8	8	18
Third Division	..	..	..	1	..	5	7	13
Fourth Division	..	..	..	..	2	4	6	12
Total War Department General Staff	1	2	2	6	7	35	40	93
General Staff with troops:								
For each infantry division, regular army	..	..	..	1	..	1	1	3
For each cavalry division, regular army	..	..	..	1	..	..	2	3
For each infantry division, national army	..	..	..	1	..	1	1	3
For each cavalry division, national army	..	..	..	1	..	1	1	3
For each geographical department	..	..	..	1	..	..	..	1
For the Philippine department	..	..	..	1	1	1	1	4
For the Hawaiian department	..	..	..	1	1	1	1	4
For Panama	..	..	..	1	1	1	1	4

mittee would have charge of the details of mobilization of the national army.

The fourth section — section on training — would consider all questions affecting the training of the individual arms of the service independently as well as of joint training. It would also have general supervision over the drill regulations and other pamphlets of instruction pertaining to the general training of the army.

The fifth section—section on military information—will study organization, tactics, drill regulations, equipment, and everything pertaining to foreign armies and should be in position at all times to give any information needed by any of the other sections of the General Staff on foreign armies.

Owing to shortage of General Staff officers it is at the present time practically impossible to compile the mass of information that has been sent to the War College Division by our observers abroad, so that we are not in a position to take full advantage of the lessons to be derived from the present European War, and the reason for this is lack of personnel.

Second Division: The Second Division consists of the finance section and the transportation section.

Finance section: Based upon a preliminary general investigation of the administration and

methods of estimating for funds of the several departments of the government the President in a message to Congress, dated March 3, 1911, said:

. . . . . .

"Estimates of departmental needs have not been the subject of thorough analysis and revision before submission; budgets of receipts and expenditures have been prepared and presented for consideration of Congress in an unscientific and unsystematic manner; appropriation bills have been without uniformity or common principle governing them; . . . *appropriations have been* overencumbered without the facts being known; . . . functions and establishments have been duplicated, even multiplied, causing conflict and unnecessary expense. . . ."

The finance section will be the means by which the Chief of Staff will exercise intelligent supervision over the preparation of the annual estimates. This section will analyze and systematize the estimates of the bureau and departments, thus enabling the Chief of Staff to submit to the Secretary of War well-balanced estimates, calculated to secure the maximum military efficiency at the least possible expenditure of public funds. In the performance of this duty the section will eliminate from the estimates any items not essential for military effectiveness, and will incorporate therein any additional items necessary to effect the desired results. This analysis and revision

will insure against duplication of either funds or functions and will result in estimates being submitted for only those articles which, with parts on hand or provided for in the same estimates, will constitute complete units of equipment or armament.

When, as is usually the case, the amount that will be appropriated is less than the total of the estimates, this section will be prepared to indicate where the necessary reductions can be made with the least loss of efficiency.

The personnel indicated for this section is the minimum that can perform the work efficiently.

Transportation section. It will be the duty of the transportation section to prepare plans for the orderly transportation in the least possible time of troops and supplies from mobilization points to all possible theaters of operation. The section will have to prepare accurate data with respect to all transportation systems in, or having a terminus in the United States, that is at all likely to be used in war and must take measures to insure that these data are at all times kept up to date.

The section must at all times be prepared to state just how long it will take to concentrate any given number of troops at any critical point, the transportation equipment necessary for the movement, and the routing that should be adopted to accomplish the movement most efficiently and

with the least amount of hardship to the troops concerned.

Most of the work of this section will of necessity have to be performed in time of peace when opportunity for careful and intensive study is present, but its activities would continue in time of war when the rapidly changing conditions would render its services indispensable. The general staff of practically every nation of Europe contains such a section and the relatively larger territorial extent of the United States renders the section of even greater importance in our army. The number of officers indicated is believed to be the minimum that can perform the duties of the section in a satisfactory manner.

Third Division: Survey and Map Division. This division is divided into three committees. At the present time we have not on file up-to-date maps of a great portion of this country, and in fact a great deal of it has not been mapped at all. We are dependent for our war maps more or less upon the Coast and Geodetic Survey and the Geological Survey. From a military point of view these maps are not as accurate and efficient as they should be, and the method of determining what areas shall be mapped has never been made to accord with any set military policy.

At the present time if a State does not choose to appropriate money for the purpose of paying

part of the expense of having its area mapped, the Geological Survey will not map it. In other words, the question of whether or not an area shall be mapped is determined by financial considerations and not from any military necessity.

Not to have efficient maps is an extremely great handicap to any army, and although a State may not appropriate money to enable its area to be mapped, still, from a military point of view, it may be essential for us to have good maps of that State not only for the salvation of that State itself but also for the protection of the States which surround it.

Fourth Division: This division broadly corresponds to the present War College[1] and the educational section of the General Staff as they exist at present.

It is divided into two committees, one of which is charged with supervision of the policy to be followed in the education of General Staff officers, the other committee has general supervision and determination of the policy to be followed in the military schools, colleges, and universities of the country.

The historical section of the General Staff is also attached to this division.

[1] The provisions of the War College study regarding the organization of the General Staff Corps have been modified in some minor points, but the changes are not material.

A Proper Organization

From the regular army would be organized the instructor corps for the national army. This corps should consist of all the extra officers and noncommissioned officers now provided by law for duty with the National Guard, and for other detached service, in proper quotas from each arm of the service, and from each staff department that would be represented in the organizations of the national army.

The present system of details should be followed in the instructor corps, and the officers and noncommissioned officers who have completed that term of service in the corps should be returned to the regular army for a period of service therewith, while their places in the instructor corps should be filled by the detail of others. In this way a proper rotation of duty is maintained, and the regular army would become a school for the instructors. A standard of instruction would soon be established and the results throughout would become uniform.

The number of officers and enlisted men in the instructor corps should be proportionate to the number of men in the national army, and should normally be not less than one officer and four noncommissioned officers for each one hundred men.

The details of the organization of a national army under a system of universal compulsory service are in themselves a study of such magni-

tude that only a meager outline of such an organization can be presented within the scope of this volume.

The raising of such a force depends primarily on the power delegated to Congress "to raise and support armies." The method by which such armies are to be raised and supported is left entirely with the Congress, and the establishment of universal compulsory military service is clearly within the power delegated to the legislative branch of our government.

Primarily an estimate should be made on the basis of the last census, of the number of available young men who would probably be fit for military service.

From this estimate, the number of divisions, both of cavalry and infantry, should be computed, and the entire country should be divided into the corresponding number of divisional districts, according to the distribution of the population.

To each divisional district should be assigned a commander and the necessary quota of staff officers, supply officers, and instructors, both officers and noncommissioned officers.

Cantonments should be constructed for the troops. A great part of the instruction, especially in the elementary stages, must be imparted on the drill ground. Canvas is an expensive and unsatisfactory form of shelter and should be used

only when in the field, either at maneuvers or when mobilized for war service.

Complete equipment for the estimated number of men in each divisional district should be provided beforehand, so that on arrival the men may be immediately equipped for service.

The supply officers detailed to the command should make suitable preparations for caring for the troops immediately on their assembly at their cantonments.

Registration

Prior to January 1 of the year for which service must be rendered, a complete registration of all young men who have entered their twentieth year since the preceding January 1, should be required, with severe penalties in case of failure to so register.

On the date of registration, young men who have legal reasons for exemption from military service, should submit evidence in support of their claims, in order that they may be examined and exemption granted or denied.

On January 1 the examination of the recruits should be commenced and continued until all have been examined, and passed, rejected, or exempted, as the circumstances in each case warrant.

As soon as the lists are completed, the men should be assigned to arm of the service, regiment, and company within the limits of the

divisional district in which they are included, and should be notified as to the date on which they should report for duty, and the place at which they should present themselves.

Reporting for Duty

On March 1 all men drawn for military service for the year should report at their designated rendezvous, where they should be finally enrolled, and immediately equipped and prepared for training, under the direction of the instructor corps, whose members should work under the supervision of the headquarters located within each divisional district.

Training should be commenced at once, and should be intensive. The total period of training should be at least 1,500 hours. In consideration of the fact that outdoor training after December 1 is generally impracticable due to inclement weather, this total will require nine months of actual training, with a daily average of eight hours on week days, with Saturday half holidays and a reasonable allowance of other holidays. This period of 1,500 hours of actual instruction is believed to be sufficient for the production of an effective soldier.

The instruction should follow the manuals prescribed for each arm of the service. Elementary instruction, the basis of discipline, should be thorough. The work should be entirely utili-

tarian, the main efforts being toward the production of the efficient fighting man; consequently, such instruction as tends purely toward military display, such as formal ceremonies, reviews, etc., should be minimized.

The instruction should be progressive, and the entire period should be divided into subperiods; advancing from the elementary stages successively to the instruction of the company, battalion, and regiment. At least a month at the end of the course should be devoted to the maneuvers of the entire division.

Furlough to Reserve and Subsequent Liability

By December 1 the weather in the United States becomes too inclement for outdoor training, and the course for the year would be completed.

The troops would then be furloughed to the reserve, with the liability of being called out as the first line, in case of war, at any time before the completion of the training of the succeeding class.

Thereafter they would have the status of reserves, to be called in their turn, either to fill gaps in the first line, or to furnish new organizations. They should be mobilized at least every second year for a period of about fifteen days for supplementary training or for maneuvers.

To supply officers for this great mass of troops will be one of the greatest difficulties.

The system now in operation for the development of reserve officers will probably furnish the officers of lower grades; for the higher grades, it would probably be necessary at first to have recourse to the officers who have been developed in the National Guard, inviting volunteers therefrom until such time as sufficient trained officers shall be developed. It might even be necessary to make temporary details from the regular army, until the new system shall be fully in operation.

It is taken for granted, however, that our political system would never admit of officering the national levies with a purely professional class of officers, that the United States Military Academy at West Point will be fully occupied in educating officers for the regular army, and that officers from the national army must be produced in other ways.

The officer corps for such a force must always depend upon a voluntary system, as no compulsory system could be devised that would force an individual into service as an officer.

Officers may be selected from two sources. First, the graduates of colleges in which military service is a part of the curriculum may, after examination, in which they shall qualify as junior officers, be appointed lieutenants and perform

their service in that capacity. Second, officers may be selected from among those who have rendered their service as noncommissioned officers or privates, upon their volunteering and passing the necessary examination. Such officers would then pass through another training period in their capacity as commissioned officers.

Promotions should be made in the same manner. No officer of the national army should be promoted to a higher grade until he should have served through at least one training period in the next lower grade, and have passed an examination as to fitness.

Promotion to the command of battalions and regiments should require special qualifications, and it would probably be necessary in the future for us to establish schools for the purpose of instructing higher officers in the duties of these commands.

For the higher leadership, the safest method will be to trust the commands of brigades, divisions, and larger units to professional officers selected from the regular army. The higher leader of to-day must be a highly trained specialist, especially if he must successfully conduct war with troops whose period of training is short. The history of the Civil War tells how unsafe was the leadership of nonprofessional generals, and through how much failure we passed before the merit of the officers trained to the profession

of arms was recognized and they were placed in the important places of command.

Hardly less important than the officers are the trained noncommissioned officers of an army. Men for these positions cannot be trained in the short period of from nine months to a year.

Consequently, they also would necessarily be on a voluntary basis, and would be selected from those men who had successfully passed an examination for the position of noncommissioned officer, after having served a full training period in the ranks.

The Working of the System

Such a system of training can only be a compromise, the conditions in our country not permitting the development of a perfect system.

Advantage must be taken of the favorable months of the year for the training of our troops. These months are from March to November, inclusive. The winter months do not permit of training to advantage.

Our wars have almost invariably broken out in the spring or summer. At this season of the year, the new levies of the national army would hardly have passed the period of elementary training, and would be in no respect ready to take the field against any organized enemy.

Consequently, we should have to rely upon the levies of the previous year, and, though these

men may have been furloughed to the reserve, their organization should be maintained, and plans for their mobilization as the organized first line should be made, so as to keep them available for immediate service until the training of the annual levies should be completed. The training of the latter could be expedited in case of war, and they could soon be made available as reinforcements for the first line.

Thus, in a war commencing in June, 1918, the troops trained in 1917, and the regular army, twenty-four divisions in all, nearly 700,000 men, would form the first line, which could be reenforced within three months by twenty divisions of troops, still incompletely trained, but effective, which would increase the total under arms to more than a million and a half. At the same time, new levies could be called and placed under training, to furnish recruits for the first line, and to form new organizations. These should be organized as depot troops, one battalion for each regiment of the marching troops, with such other organizations as should be esteemed necessary for the successful prosecution of the war.

Assuming that we should be able to train annually 600,000 men, and that these men would be held available for military service for a period of ten years, we can form a comparatively correct estimate of the ultimate military strength at the

end of ten full years after the system has been in operation.

If we assume that the regular army is of constant strength, and that it will number for war purposes about 285,000 men, and if we also assume that the strength of each annual levy of the national army diminishes from all causes at the rate of five per cent per year after having rendered its initial training service, we find that the aggregate strength in trained men at the end of ten years will be as follows:

AGGREGATE MILITARY STRENGTH AT THE EXPIRATION OF TEN YEARS AFTER THE ADOPTION OF UNIVERSAL COMPULSORY SERVICE

Regular army—7 infantry and 2 cavalry divisions	285,000
1st year—20 divisions and auxiliary troops	600,000
2d year—19 " " " "	570,000
3d year—18 " " " "	540,000
4th year—17 " " " "	510,000
5th year—16 " " " "	480,000
6th year—15 " " " "	450,000
7th year—14 " " " "	420,000
8th year—13 " " " "	390,000
9th year—12 " " " "	360,000
10th year—11 " " " "	330,000
Total, 162 infantry, 2 or more cavalry divisions	4,935,000

In other words, after ten years of universal military service we should have an available strength of approximately five millions of trained

men, all between the ages of twenty and thirty years, the ages at which men are the most effective physically.

The reserve of officers would be proportional, and, should war come upon us, we should be prepared to the fullest extent to protect our country from invasion by any power on earth.

With such a force at our disposal, no nation on earth would attempt to invade our territory. If war should come, it would be kept beyond our borders, and our people would be secure at all times in their homes and in the ability to work out without molestation or hindrance our great national ideals.

Moreover, the specter of militarism could not appear among us, for the five million trained men would be a part of the great citizenry of the country, engaged in the arts of peace, and only called to arms when the peace and tranquillity of the nation were imperilled. On the contrary, they, as citizens, would be a guarantee against the usurpation of our rights by military faction from within or foreign enemy from without.

VIII

Organization of Resources

SECOND only to the military organization, and not less important to the success of military operations, is the organization of our systems of communication, under which may be grouped the great railroad network, and the telegraph and telephone lines that connect the most distant points of our country.

There is no model for such an organization. In nearly all of the nations of Europe, which for many years must furnish the models for our military organization, the railroads and telegraph lines are wholly or in greater part owned and operated by the government. As government agencies, their organization along military lines has been a natural consequence, and the transition from a peace status to one of war could always be accomplished without serious derangement of the entire system.

In the United States, the railroads, and the telegraph and telephone lines are privately owned, and are under the control of the Federal government only so far as their interstate relations are concerned. Within the boundaries of a State,

the United States have absolutely no jurisdiction over our communications.

It is true that legislation has provided a doubtful control over the railroads, in that preference must be given to the movement of troops and supplies over the regular passenger and freight traffic, but this control exists only as a war power, when war is imminent, or after it has been declared. No such requirement has as yet been applied to our telegraph and telephone systems.

A proper organization for our railroads and telegraphs will involve their complete occupation by Federal authority in time of war and must therefore include a corresponding authority in time of peace to inventory their material, to organize their personnel, and to make all the plans and preparations that may be necessary for an immediate transition from status of peace to one of war.

Such an organization in time of peace should work in conjunction with the Quartermaster Corps of the army, and should be under the general direction of the General Staff, so that it may be coordinated with its war plans. The outlines of the plan of organization, many of the details of which have already been taken up by the War Department, and lack only the legislative authority to carry them out, are as follows:

1. The maintenance of complete inventories

of all railroads, showing their trackage, the capacity of sidings, yards, and stations, their repair shops, warehouses, facilities for supplying fuel and water, in short, complete information of each road such that its capacity for moving and supplying troops in the field or in transit may be easily determined.

2. Complete lists, kept up to date at all times, of all rolling stock, including the various types of locomotive, passenger coaches, Pullman and tourist sleepers, baggage, flat, gondola, box and stock cars, showing their general distribution at all times, so that plans for mobilization involving their use may always be ready on short notice.

3. The establishment of a simple system of type trains, each capable of carrying one complete unit, such as a battalion of infantry, a battery of artillery, or other type military organization.

The formation of such types will enable the railroads to more readily appreciate the problems involved in the movement of troops by rail, and to respond to a call for made-up trains with the least practicable delay.

At the present time there are no such types. When troops are to be moved, tables must be prepared showing the loading of the troops and, based on these tables, cars are called for in specified numbers and classes, but the railroad man can have no conception of the manner in which the trains should be made up, and must work in

the dark in preparing for a movement, until he is informed by the officers in charge of the work. Confusion and delay are the natural results. The fault lies in our lack of system and cannot be justly attributed to either the military authorities or the railroads, though both have from time to time been made the scapegoats.

4. Data of a similar character with regard to the telegraph and telephone companies. The extent and capacities of the several systems, with their branches and connections, should be carefully determined and utilized as a basis for our plans for mobilization and concentration.

5. The enrollment of all officials and employees of railroad, telegraph, and telephone companies as members of the national forces, and their formation into appropriate units for the administration and operation in war. Little improvement can be made in the present organization of most of our companies, further than to appoint the proper officials as officers and noncommissioned officers and to give them in this manner an official status that will be necessary to enable them to discharge their duties under the trying conditions that will undoubtedly supervene during a state of war.

The best railroad and telegraph troops for war are beyond a doubt composed of men who have been accustomed to perform similar duties in time of peace, either as organizations or as in-

dividuals. The nations of Continental Europe have taken advantage of this fact, and of their government ownership to thus train and organize their railroad and telegraph troops, and the results attained have justified their foresight in this respect.

In our country, with its privately owned utilities, we must in some way devise a system whereby the same advantage will accrue to us. The only method that suggests itself is the enrollment as above described of all railroad and telegraph employees, with a corresponding exemption from the ordinary service under arms.

6. For the working out of complete details of the organization of our communications, a permanent committee of officials of the railroads and telegraphs should be formed, to work in conjunction with the General Staff and the Quartermaster Corps in the preparation of plans for transportation, for the mobilization of the forces, of their concentration in the strategic areas at the outbreak of war, and for their supply in campaign. Such plans at the present time have taken on an added importance, the rapid and efficient transport of troops and munitions of war being equivalent to greater numbers.

The members of such a committee should be higher officials of the companies to which they belong and should rate as higher officers of the transportation troops in war. With their assist-

ance, plans should be completed for the mobilization of the national forces, according to the following general lines:

1. The mobilization of all railroad troops, and their assignment according to the war plans for the special emergency.

2. The suspension of all civil traffic, both freight and passenger, during the period of mobilization of the troops.

This will usually necessitate a stoppage of the normal traffic for a period of from three to five days, during which the public will be temporarily deprived of the privilege of travel, and will be compelled to subsist on supplies at hand.

3. The suspension of civil traffic during the concentration of the forces in the strategic areas, over the lines leading thereto, and the transportation of the troops according to well-matured route plans.

The interference of civil traffic with the mobilization and concentration of troops has been one of the features of our American system, and the one to which may be attributed the greater number of the failures that have been made.

During the Civil War, operations were frequently hampered by the failure of the railroads to furnish transportation and to expedite the movement of troops by rail.

In the mobilization and concentration of troops

in the Southern States during the war with Spain in 1898, the attempt on the part of the railroads to carry out their usual functions as common carriers and at the same time to transport troops to the concentration points resulted in seriously congesting the traffic and in delay and confusion in the military operations.

The latest experience, the movement of the National Guard to the border in 1916, produced the same results, delay and confusion for the troops and unsatisfactory service for the general public.

These experiences, contrasted with those of foreign nations, in which, due to the employment of proper methods, mobilization and concentration have proceeded smoothly and effectively, should teach us to adopt and develop our system in a similar manner.

When military necessity arises, it is paramount, and all else must be held in abeyance until its requirements are satisfied. Extended movements of troops will rarely consume more than a few days, and the better the organization the shorter will be the period required. Concentration within a threatened area may be essential, even vital. The temporary cessation of civil traffic may cause discomfort in many cases, may be prejudicial in a few, but in none can the prejudice be a tithe of that which may easily result from a badly managed and delayed mobilization, or a tardy and

confused concentration in the face of an energetic and well-organized foe.

Modern war is a war of munitions. That nation which is best prepared at the outset, and which has sufficient resources for supplying unlimited armament, equipment, and above all, munitions, to an adequate force of well-trained troops, possesses an initial advantage that will lead it to victory—victory which in our case is the complete protection of our shores and of the lands and peoples whose destinies have been intrusted to us.

Should we be so prepared, we can make that defense good, by meeting the invader at the shore, repelling his attempts to gain a lodgment, or destroying him before he has been able to establish himself. Even more, and what is most desirable, it is extremely improbable that any nation would hazard a war with us, and above all, that it would attempt an invasion of our territory. Thus, by being prepared, we shall, with our pacific policy, be able to ward off the disaster of war or protect ourselves should that great misfortune come upon us, and maintain the military virtues without which our nation will become decadent.

It has been frequently estimated that, for the complete defense of our territory, a first line army of at least a million men will be needed. Some in high authority have even estimated that the need will be far greater. However, to demon-

strate the amount of preparation that will be necessary, the estimate of a million will suffice, as any number greater or smaller will bear the same proportion. Let us then compute the approximate quantities of armament, ammunition, and some of the other principal auxiliaries that will be needed to properly equip such a force. Great reserves of these materials of war must be on hand at the outset, as one of the most important lessons to be derived from the present war in Europe is that the maximum forces must be gathered together at the earliest possible moment and provided with almost unlimited munitions.

At the same time, the reserves that should be accumulated must be the subject of a careful detailed study. Armament becomes obsolete. Due to invention and scientific research there is a constant development in the means of making war, with the occasional production of some new element that causes a complete revolution in material and methods. That which is most modern and effective to-day may be rendered obsolete and useless by the inventions of to-morrow. While it is unwise to have no reserve at all, it is almost equally unwise to accumulate material that may within a short period of time become out of date or useless. However, even at the risk of their becoming obsolete, certain reserves such as the following must be maintained:

Rifles

A consideration of the organization provided for by our present legislation develops the fact that 68 per cent of the forces, including infantry, cavalry and auxiliary troops, will be armed with the rifle. This will require 680,000, or roughly 700,000 rifles.

Judicious preparation, especially for a war of considerable duration, demands that there should be one rifle in reserve for each one in the hands of the troops, and those on the western front of the European struggle have required two, so that our store of rifles should be not less than 1,400,000.

Machine Guns

To the machine gun is attributed an important part in the modern battle. Its fire power has been estimated to be that of from thirty to fifty infantry rifles. It is especially valuable in defensive operations, and, as our plans are all in the nature of an adequate defense, they should be provided in extremely liberal measure. Our present organization provides for approximately three machine guns for each thousand men of the field forces, giving a total for a force of a million men of three thousand. If, as before, we allow for one gun in reserve for each one in the hands of troops, the number rises to fully six thousand.

This estimate is much below what it should normally be, as we are credibly informed at the present time that the belligerents in Europe have been maintaining as many as forty guns per thousand men in some portions of their trenches.

Pistols

Nearly 50 per cent of our troops are armed with the pistol. The percentage is excessive, and is largely due to the fact that our cavalry and field artillery are overarmed in this respect. However, unless change should be made in the armament of this portion of our national forces, the computation should naturally be based on that which we now have.

Five hundred thousand weapons will be necessary to provide complete armament, and, with one pistol in reserve, we should require 1,000,000.

Field Artillery

The General Staff has agreed upon a proportion of about five and one-half field guns of all calibers and types for each thousand rifles of a well-balanced force. While the proportion is rather small in comparison with that now known to exist among the warring nations, it will nevertheless serve to show our minimum needs in this respect.

With this proportion, there will be required, with the 700,000 rifles of the field forces, 3,850 field guns, and with the proper reserve, which should be at least double the number with the troops, the total amounts to 7,700 guns of all types and calibers.

Small Arms Ammunition

The enormous consumption of ammunition in the European War has completely revolutionized the ideas of the military expert as to the quantity that should be on hand for war. It was formerly estimated that for each rifle there should be provided about one thousand cartridges for what was denominated a "normal" campaign. This number has had to be materially increased, and a total of three times that number is now regarded as a modest estimate. Thus, for the 1,400,000 rifles to be provided, there should be 4,200,000,000 cartridges.

As the same cartridge is used in the machine gun as in the infantry rifle, the total estimate should include the necessary ammunition for the six thousand machine guns that we have found to be essential. For each of these, due to their high rate of fire and lavish use of ammunition, 100,000 is not believed to be excessive, and the ammunition for these guns alone would amount to 600,000,000 rounds.

These, with the ammunition necessary for the

rifles, make the total of 4,800,000,000 or nearly five billions of cartridges.

Pistol Ammunition

The pistol is a weapon of occasional use only, and its consumption of ammunition will therefore always be small. It is thought that one hundred rounds of ammunition per pistol will suffice for the beginning of any campaign that the American army may ever have to undertake. The total for the million pistols now thought to be necessary for the equipment of our National Army may therefore be placed at about 100,000,000 rounds.

Field Artillery Ammunition

The requirements as regards field artillery ammunition can be only vaguely estimated. Experience before the outbreak of the European War indicated that, for a war such as those which had previously been fought, a total of one thousand rounds per gun was sufficient. How greatly this number has increased can only be shown when we have accurate figures on the present consumption of ammunition.[1]

Fairly well-established rumors have, however, shown what a disaster it is to an army to lack

[1] In the battle of the Somme, during July, 1916, the consumption on 77 mm. (3.1-inch) ammunition averaged 145 rounds per day per gun, or 4,495 for the month. The weight of ammunition fired per gun during the month exceeded 34 tons or about 70 times the weight of the gun itself.

artillery ammunition in the crises of a campaign. As to its expenditure, the information received from abroad is vague, and varies from two hundred rounds per gun per day up to some extraordinary cases in which it has been reported that certain batteries have fired more than sixteen hundred rounds per gun per day, or more than one round per gun per minute, during a bombardment that lasted several days.

In the face of such figures, conservatism is impossible and the only proper estimate of the number of rounds per gun that should be provided, in order that none should lack ammunition at any stage of a campaign or battle, is that it should equal *the life of the gun,* that is, that the number of rounds should be such as would wear out the lining of the gun and cause its withdrawal from service. Broadly speaking, this will happen after an average of about 10,000 rounds has been fired, and it is believed that this number should be accepted as the standard allowance.

The total field artillery ammunition required will thus be 77,000,000 rounds.

Aircraft

An estimate of the aircraft that we should provide can be only approximate. It is known that the numbers of airplanes and observation balloons employed by the belligerents are immense,

but information as to the actual numbers is vague and indefinite. Newspaper report has it that France alone is employing more than 20,000 airplanes on the western front, while from more reliable sources the number is placed at about 7,000.

The control of the air is to-day of vital importance in military operations. To be able to drive the enemy from the air and prevent him from obtaining information of the strength and dispositions of our own troops, while at the same time we can procure complete and definite knowledge of a similar character regarding his operations, is to place him in the dark as to our own movements and to make our own plans to circumvent and discomfit him in broad daylight.

With anything like equality of numbers, the control of the air means victory to the side possessing it. To lose it is to lose the initiative and to play a purely secondary rôle with almost the certainty of final defeat.

While we shall probably never need the staggering numbers of aircraft that are required by the belligerents in the Great War that is now going on, still our equipment in this respect should be such as to enable us to claim the command of the air from any invading force that may be dispatched against us.

For the equipment of our estimated million men, according to our present organization, it

will therefore be modest to assume that we shall need at least one thousand airplanes, both in service and in reserve. These should naturally be of several classes, fast reconnaissance machines, battle planes, and artillery observation planes.

The observation balloon has played an important part in the present war, especially in the direction of the fire of the field artillery. The airplane has been of the highest utility in searching out the enemy's batteries and infantry masses, but is not believed to have been efficient in assisting the artillery in the observation and correction of its fire. On the other hand, the captive balloon has afforded a means of observation and quick direction of fire that has made movement on the battle field almost impossible and has forced all the belligerents to completely screen their guns so as to render them practically invisible even when firing.

The utility of the balloon has been so appreciated that many officers of our service believe that at least one should be supplied for each battalion of light field guns and, in the case of the heavier types, as many as one for each battery. Roughly we should require about five hundred of these auxiliaries to artillery fire, with no reserve, as the materials of which they are made are perishable. Proper provision should be made, however, for the prompt manufacture of additional

balloons whenever the exigencies should require them.

Horse Equipments and Harness

Fully 20 per cent of a properly organized army will consist of mounted men, for whom horse equipments must be provided. It might be assumed that these accessories could always be found in the markets of the country, but the contrary has been found to be the case. A call for a few thousand saddles, blankets, bridles or other articles, even of the ordinary commercial pattern, which is not at all suited to military requirements, would exhaust the supply in our markets, and the remainder of the two hundred thousand that would be needed could only be obtained after several months. Cavalry especially is needed at the outbreak of a war, on account of its mobility; its use becomes limited after the great infantry masses have come into contact. Therefore, to obtain the maximum of benefit from our mounted service, it should be ready in every particular in the beginning, and the full number of horse equipments should be always on hand.

In the same manner, artillery harness and horse equipments must be ready at the outbreak of war. For each gun in service, there will be required at least three caissons, or ammunition wagons, which, with the gun itself, will need at

least twenty-four horses, with their harness. Thus, if we have in service, without a reserve, approximately four thousand guns, there will be needed at least 100,000 sets of artillery harness. Should we desire to keep on hand the harness for the reserve guns and caissons, with the expectation of horsing them in case of emergency, this amount would be doubled.

Transportation

From our military history we learn that the proportion of horses and mules employed in nearly all our campaigns has been approximately one animal for each two men of the armies.

It is not yet evident that this number can be materially reduced, and the experience in Europe seems to indicate that the introduction of motor transport has not yet caused a diminution in the requirements for transport animals, but up to the present time the motor vehicle has been merely supplementary to the time-honored transportation of armies.

The enormous demands for supplies and munitions for a modern army in the field make it impossible to keep on hand the necessary vehicles and animals in time of peace, and a special mobilization of these adjuncts of our army must be planned to meet the requirements of war. We must rely upon the mobilization of the private property of our citizens.

With this object in view, and following the example of foreign nations, we must adopt some system through which we may easily determine what our war reserves will be. All vehicles suitable for military purposes, including wagons, autotrucks, and automobiles, must be listed, their fitness for service determined, and arrangements made of the terms under which they may be accepted by the government. Those which fulfill the conditions for service should be assigned as far as practicable to the organizations with which they will serve in case of war.

A survey of all horses and mules should be made, and those fitted for the use of the army should be listed, showing their owners, ages, values, and the arm of the service for which each animal is suited. The terms under which the United States should accept the animals should be arranged in every case and simple and direct methods of reimbursing the owners should be adopted, other than the involved methods now in vogue for making purchases for the government.

The animals too, as well as the vehicles, should be assigned to organizations formed in the areas in which they exist in time of peace, so that each unit of the mobile forces may be completely equipped with proper transportation at its point of mobilization.

The sudden withdrawal of a large portion of our means of transportation from the uses of

peace time will doubtless restrict for a time the ordinary commerce of the nation, but we must be prepared to accept the abnormal state of war, and must realize that in such cases there will always be a period of privation to all. The necessities of war transcend all others, however, and we must trust to our great resources for the restoration of normal conditions.

It will be seen that the organization of our resources for defense involves our complete organization as a nation, a new departure for our people. Organization requires centralization, and our government is the least centralized in the world.

We have become so accustomed to individualism that such a centralization may seem to infringe the rights and privileges that we are wont to regard as inalienable. It is difficult to conceive that our future as one of the great nations of the earth will depend upon the willingness of our citizens to subordinate the rights and privileges of the individual to the welfare of the republic. The maintenance of those rights and privileges involve duties that we must recognize and accept. Our boasted liberty depends upon our ability to protect it at all times, and that protection is possible only when we are prepared to meet an assault from whatever quarter.

Adequate preparedness does not involve the surrender of any reasonable right of the indi-

vidual. It merely exacts a recognition of the necessity of organization in self-defense, and of the duty of every citizen to perform his part.

If we refuse to recognize this necessity and this duty, we can never be properly prepared. We must resort to a professional army, always too small for our defense, and shall find ourselves unprepared and unorganized should the great calamity of war ever befall us.

Our people become unused to the profession of arms, lose the military virtues of courage, patriotism, and discipline, and through the long continuance of slothful peace, will become decadent. Rome fell when her citizens ceased to be soldiers and the defense of her great empire had to be intrusted to armies of mercenaries. Will not history repeat itself if we do not heed the call and prepare?

The advocates of preparedness, and especially those officers of our army and navy who have raised their voices in the appeal to our people to organize and be ready for any emergency are subject to the abuse of the pacifist even to the cruel and unmerited accusation that they wish to plunge the country into war.

The professional pacifist, whether influenced by honest conviction or by base political motives, refuses to accept the teachings of history, than which we have no other sure guide, in spite of

the failure of predictions within the past decade that great wars were impossible and that an era of universal peace was at hand. At the same time, he seeks to create a prejudice against the very ones to whom the nation should look for guidance in its military policy, attributing to the professional officer the base and venal motives of seeking advancement.

The higher officer of to-day must be not only a soldier, but a thinking student of history and of world policy. He must keep himself informed of the policies pursued by other nations, as evidenced by their commercial, military, and naval preparations, must be conversant with the trend of our own national policy as dictated by our expanding international relations, and must endeavor to look forward into our future along the lines of our security and peace.

Those of our officers, and they are not few, who have looked upon the grim and terrifying face of war, would be the last to wish that such a calamity should befall us. The most pronounced pacifist, even he who advocates peace at any price, cannot wish war, with its attendant hardships, its sacrifices of blood and treasure, and all the other appalling results that follow in its train, less than do the clear-sighted officers of our land and naval forces, who can plainly foresee the terrific effects of such a disaster upon our happy and prosperous country.

In spite of the abuse that has been heaped upon them, the attempts that have been made to discredit them and to attribute to them unworthy motives, our people will sooner or later learn to hold the officers of our services in the regard that they merit, that of high-minded public servants of unimpeachable patriotism, who, in advocating the preparation of the nation for defense, are endeavoring to discharge to the full the sacred duty of informing the people of their dangers, and of pointing out the way to security and peace.

IX

Mobilization

MOBILIZATION is a word with which the American people has become familiar since the outbreak of the European War. Previous to that time it was a technical term used only by the military profession to describe the assembly and preparation of troops for service in the field, the making mobile, as it were, of the military forces for war.

We have come to use it for all purposes connected with military preparation, mobilization of industries, of resources, and similar phrases.

Let us, however, study the word in the technical military sense in which it is understood by the Continental European, to whom it has become familiar through its practical application, that is, through the raising of the military forces from a peace footing to war strength by calling in reserves, and the final preparation of the troops for field service.

Our National Guard and organized militia have recently been mobilized after a fashion, but in the best manner that could be devised for a failing system. The mobilization of 1916 has,

however, been characterized by a high officer in the military service as a "tragedy."

Whereas a mobilization should be made in perfect order and in conformity with well-laid plans, this one was fraught with confusion and disorder, and it was not until days and even weeks had elapsed after the call to arms had been given, notwithstanding the most earnest endeavor on the part of all concerned, both regulars and National Guardsmen, that the troops were finally assembled, at a minimum strength, in their mobilization camps, and their training was begun to fit them for service in the field.

Fortunately the mobilization was merely a protective measure against bandit raids from Mexico, and not for the purpose of defending our territory against invasion by a well-organized foreign foe. At great expense it served its purpose of procuring the security on our southwestern border that should have been assured by the prestige of our name.

We shall be indeed fortunate if the experience is taken to heart by our people, and if a proper system is adopted through which an adequate military force, effective in numbers and training, may be mobilized with the celerity that is essential to modern conditions.

We shall be doubly fortunate if our people become convinced of the futility of the National Guard and volunteer systems as effective factors

of the national defense, and if they adopt the military system in which every citizen is required to do his part.

When we study the preparations made by the European nations prior to the Great War now in progress, we see that two means were sought to the great end of military success. The first of these, organization and training, we have already studied. The second, mobilization, is a corollary to the first, but is nevertheless of primary importance.

An expeditious and effective mobilization enables a well-organized nation to take the initiative at the commencement of war, and may, if the hostile mobilization should be tardy or badly managed, make it possible to strike a sudden and effective blow that will at once attain the ends for which the war was undertaken. Successful mobilization may thus make it possible for the prepared nation to end a war in a single campaign.

It is thus evident that the study of mobilization and the preparation of detailed plans to that end are of hardly less importance than organization and training, which are the means through which the resources of the nation are made available and effective.

At the beginning of the European War, Germany officially ordered mobilization on August 1, 1914, though there are not lacking certain in-

dications that preparations were being made in secret for some time before that date.

Within a week after the order was given, the entire military strength of the nation was under arms and ready to entrain for the theaters of operations. The day following the order, German frontier troops entered the Duchy of Luxemburg, and two days later the advance troops commenced the invasion of Belgium.

Available data indicate that the mobilization of the French army was effected with similar rapidity, though at a later period.

For these nations, delay and confusion in the assembly of their forces would have meant irretrievable disaster. It was essential to the life of the nation that its military forces should be mobilized in the shortest period of time.

For years, each of them had been watching the other; any move on the part of one was met by a corresponding countermove on the part of the other. Each strove to perfect its own plans, and to prepare against the day when the long-expected blow should fall.

Not only were their standing armies maintained by compulsory military service at the maximum strength permitted by their resources, but constant preparations were made to develop the full military power of the nation on the shortest notice.

This was accomplished through the maintenance of a schedule, or calendar, of mobilization, kept up to date by the constant labor of a section of the General Staff, and under the immediate direction of its chief.

It was the special function of this section to revise these plans in all matters referring to personnel, equipment, supplies, and transport; nothing that could facilitate mobilization was omitted. In addition, they strove to keep in touch with the plans of their great adversary, in order that their own plans might be modified to meet any change of grouping of troops, means of transport, or other condition that would afford him an initial advantage on the outbreak of war. The construction of a line of railroad, the opening of new wagon roads, and especially the improvement of roads for motor transport were matters of serious concern, and were given careful consideration in conjunction with the mobilization plans.

Germany was divided into twenty-five army corps districts, and France into twenty, corresponding to the number of army corps that each maintained in time of peace. Within each corps district the subdivisions, divisions, brigades, regiments, and smaller units were distributed locally, each with a mobilization point, usually centrally located, to facilitate rapid assembly of troops.

The strength of an army corps in both countries was approximately the same, the German corps, which may be taken as a type, consisting of two infantry divisions of two brigades each (eight regiments of infantry in all), two regiments of cavalry, and 160 field guns, with auxiliary troops. The total war strength was about 43,000 men, with 15,500 animals, and about 3,000 vehicles, including its artillery. The peace footing was normally about two-thirds of the war strength, or between 28,000 and 30,000 men.

The mobilization of the corps consisted in the assembling of the reservists who were required to raise the corps from peace to war footing, equipping them, and preparing the organization for field service; in procuring the extra equipment in the way of animals, wagons, motor vehicles, and other auxiliaries that were not owned by the government in time of peace; in obtaining the necessary supplies of all kinds for the conduct of a campaign; and in making the final preparations for the concentration of the corps at the strategic point from which it should commence its field operations, including the railroad plans for both mobilization and concentration.

The reservists were all listed with the organizations to which they belonged, and their home addresses. For each man a card was kept on

hand, ordering him to report within a specified time at the mobilization point of his organization, and giving him minute instructions as to where and to whom he should present himself. The order lacked only the date to make it effective.

With a complete knowledge of the auxiliaries that would be required for the service of the troops in the field, a complete survey of all animals, wagons, motor cars and trucks, and other equipment was regularly made in each corps district; those suitable for military uses were listed and arrangements were made for requisitioning them on mobilization.

The supplies that would be needed were likewise listed, the exact amounts were carefully computed, and the supply officers were kept constantly informed of the amounts that each must be ready to acquire at a moment's notice.

The plans for transportation were most elaborate and exacted from the General Staff officers employed in their preparation the most thorough knowledge of the railroad systems, together with the experience necessary for them to take up their management, divert them from civil to military use, and keep them running smoothly withal. It is said that the preliminary work of the German General Staff officers employed in the transportation section consisted for the first year or more in the preparation of time tables

for military trains and of the loading tables of troops on those trains, until constant practice made them experts in their work. Their mobilization plans were elaborate in the extreme, and covered the complete mobilization and concentration from the moment that civil traffic was suspended until the concentration in the strategic areas was completed and the railroads resumed normal conditions.

In order to appreciate the infinitude of details involved in the mobilization schedule, or calendar, let us examine the process of mobilization of an army corps.

The emergency has arisen, and the order to mobilize has been given by the head of the nation. The plans have been prepared with such foresight and skill that the single word "Mobilize" suffices to set the machinery in motion.

The message is sent by the instructions of the supreme commander of the army to the corps commander; by him it is transmitted to his principal subordinates, who in turn pass it downward through the military hierarchy until it finally reaches the ultimate subaltern.

The order is given right of way over all telegraph and telephone lines, and is delivered with the minimum of delay to every officer in the service, through a chain that is established and is known to all. Within a few hours after the

decision to mobilize has been announced, the order has been received by all and the work has begun.

The commanders of all units immediately proceed to the mobilization points of their commands and direct the mailing of the order to the reservists. The postal service does the rest. All private mail is cast aside until the summons is delivered.

Within a few hours the men begin to arrive. By road, by railroad, and on foot, they make their way to the appointed rendezvous. Those who may not have received the summons, on hearing that others of their class and organization have been called, are obligated to obey it, and likewise leave their work or their homes to go to the mobilization point.

The use of the railroads for civil traffic is suspended, and the entire attention of the roads is devoted to the transportation of the mobilizing force.

No tickets are required for travel. The mobilization order suffices. Even those who have not received it are transported, a mere note of the matter being made for later adjustment.

The trains are crowded with men flocking to the colors, but the traffic is conducted without delay and without confusion. Order and regularity prevail, for the simple reason that all has been foreseen and duly planned.

Within an exceedingly short time the reservists have reported to their organizations. The scene of activity is then transferred to the barracks.

The men are received, checked on the rolls, and incorporated in their companies. No physical examination intrudes its delay; the reservists are not recruits entering the service for the first time and who must therefore be carefully examined before they can be accepted; they are men who have recently performed their compulsory military service, whose physical condition is known, and who will be ready, after a few days hardening, to enter the ranks of the first line organizations, ready in all respects for the field.

Their equipment, which has been stored at the mobilization point, ready for use at all times, is issued to them and their training commences. Within a very few days they are hardened and have reacquired the martial habit. The companies have grown from their peace footing of about one hundred and fifty men to the war strength of two hundred and fifty; the battalions have risen to a strength of one thousand, and the regiment to three thousand. Cavalry, artillery, and the auxiliary services have undergone corresponding increases.

The depot battalions are established for the training of the reservists not needed for the first line, and for the subsequent training of the raw levies that must be called to fill the gaps that will

result from battle. Reserve officers are assigned to this duty, and at once take up the work of the training and administration of the reserve units.

The reservists have reported to the barracks from the office, the workshop, and the farm, wearing the clothes in which they performed their daily tasks. On donning the uniform, their civil garb is taken in, packed, marked with the name of the owner, and stored or forwarded to their families or their friends, at the option of the soldier.

Within a short period of days, the troops are thus assembled and prepared for the field. There are no recruits to be solicited, examined, or trained; all are trained and disciplined men, ready to take their places in the fighting line. There are no organizations below war strength; they are complete to the last button on the last coat.

Meanwhile, supplies are being gathered and prepared for transportation or for issue to the mobilizing troops. Money has been distributed to the purchasing officers, and each, knowing exactly what will be necessary, takes steps to acquire it and procure its delivery at the mobilization points.

The kind and quantity of the supplies have been previously determined by careful computation, and each purchasing officer proceeds with a full knowledge of the task before him, and with-

out waiting orders or authorizations for his purchases. There is no duplication, no shortage, and no waste.

At the same time that the summons is sent to the reservists, similar notice is served upon all owners of animals, wagons or other vehicles, motor cars and trucks, and the other auxiliaries that have been surveyed and found suitable for military purposes.

Boards of officers, the constitution and membership of which have been provided in the plans, assemble at the mobilization points to inspect these auxiliaries.

Horses and other animals that have been duly requisitioned are brought in by their owners, inspected by the boards, and if accepted are delivered to the troops to be equipped and are at once fitted with saddles, bridles, or harness, depending upon the nature of their assignment, whether to cavalry, artillery, or the transport train. These assignments have been made at the time of the survey, so that no delay is experienced between the acceptance of a horse and his delivery to the proper organization.

Under the terms of the arrangement that has been made for their reception by the military authorities, the animals have been given in advance the preliminary training to fit them for entrance into the service, and all that remains to be done is to assign them to organizations, in

which they are duly equipped and formed into teams or are turned over to their individual riders.

Wagons and motor vehicles are likewise examined, accepted or rejected, those found suitable being at once assigned to the proper organizations according to the plans that have already been made.

Under the unremitting efforts of the transport officers and men, the transport trains are immediately built up, and, by the time that the reservists have been received, enrolled, and equipped, the trains are ready for the movement to the field.

The mobilization is drawing to a close. The men are assembled and completely equipped; supplies have been gathered, the stores of ammunition that have been prepared beforehand are issued to the organizations; the transport trains are completely organized and equipped with all the materials needed for a campaign.

Then, and then only, does each regimental commander send to his brigade commander, by whom the message is transmitted to the corps commander, until it finally reaches the Chief of Staff, the simple telegram: "Mobilization completed."

Throughout the country the same activity has prevailed. The assembly of every unit of the army has been accomplished in the same manner. There has been no haste, though there has been rapid action, the rapid action of men who knew

what they were doing, for whom every step has been carefully mapped out beforehand. There has been neither delay nor confusion. Within a few short days the military strength of the nation has been mustered, and is ready for use under the orders of its directing head.

Meanwhile, the railroads, the arteries through which the mass of men, animals, vehicles, and munitions of war is soon to flow, have been the scene of unexampled activity.

We shall assume that the concentration is toward the west, and that the roads running in that direction must be prepared for the great task of transporting the military host to the scene of operations. Traffic other than military is suspended. The rights and privileges of the civil population must for the time being give way before the great emergency that confronts the whole people.

Rolling stock is collected at the mobilization points, and trains are made up, each of a type to carry a prescribed unit, and in accordance with the General Staff plans that have long been made, plans with which the railroad authorities are thoroughly familiar.

From the roads running north and south, temporarily in disuse, operatives are transferred to the roads over which the military traffic must pass. New signal stations must be erected, stations must be established at the stopping points,

arrangements must be made along the lines for the feeding of the men and the feeding and watering of the animals. Facilities for supplying coal, water, and other supplies for the locomotives must be supplied for the increased number of locomotives that will pass over the lines. In short, everything must be ready, according to plan, to permit the uninterrupted passage of troop trains to the front.

All these details of preparation are being carried out while the troops are mobilizing. Every step has been planned beforehand, and time and labor have been so computed that all will be ready by the time the mobilization has been completed. There is neither haste nor confusion. Everything moves with the regularity of a well-ordered machine.

The Second Line

The mobilization of the first-line units has been completed, but there is still more to be done before the strength of the nation has been developed.

With her training system, Germany had available at the outset of the present struggle many more men than could be utilized in her regular army, even when it was brought to war strength. How were these men to be utilized?

According to her system, there was behind each army corps of the first line a reserve corps of the

same number, mobilized in the same corps district. Immediately following the mobilization of the first-line army, the reserve assembled. The details of their mobilization would be merely a repetition of those already recited. The work was decentralized, the work in both cases being entirely in the hands of the corps commander. In the mobilization of 1914, it is credibly stated that the reserve corps were mobilized in time to participate in the Battle of the Marne, early in September.

After the reserve corps had departed for the front, which normally occurred within the month following the first order, the administration of the district remained in the hands of his successor, who continued the mobilization of the available men of the district, drawing them in to the depots, where they were placed in training to fill the casualties of war, or to form new organizations.

Every depot in the country has been constantly employed in this work, which is as important and as absorbing as the military operations themselves, though it is all behind the lines and is little noticed by the casual observer.

The principle always followed is to keep the organizations at the front filled to the maximum; a company of infantry is always 250 men, a battalion 1,000, and a regiment 3,000. Losses are replaced from the mobilization agencies in the

home district of the corps, which are constantly in operation while the troops are in the field.

Concentration

The mobilization has been completed. The coordination of the assembly of the forces and the preparations of the railroads has been such that when the former are ready to move, the latter are prepared to transport them. The time has been computed with exactitude, so that at the hour scheduled the troops can be marched to the railroad and find there, at the designated points, the trains that are to carry them to the front.

Places and times for loading each unit have been designated in the plans. The trains have been made up and set at the proper sidings; type trains to carry a battalion of infantry, a battery of field artillery, and units of appropriate strength of other forces, have been determined in the plans, so that all that remains for the railroad management is to put them together and place them at the sidings for loading.

The order in which the trains are to move out has also been determined, the troops that will be needed first after the detrainment at the concentration point being scheduled to depart first, and so on through the whole great column. In this arrangement, tactical considerations are paramount, since the operations of war will probably commence soon after the troops have arrived at

their destinations. The first trains to leave will therefore carry infantry or cavalry, followed by the artillery and the remaining troops, the supply and ammunition trains and the numerous other auxiliaries that go to make up the complete army corps.

Where the concentration point is at a distance not exceeding fifty miles from the mobilization point, it has been found that concentration can be effected quite as rapidly by marching as by transporting the troops by rail, and it is so planned, the rail transportation that would otherwise be necessary being thus freed for more distant organizations.

The concentration in every possible strategic area has been the subject of extensive study by the General Staff, and the plans have been so made that the several army corps will arrive in such succession that they may be easily taken care of at the terminals. Congestion and confusion in the detrainment are carefully avoided, and the corps arrive one after the other in complete order and regularity.

When we consider that a single army corps requires about one hundred and fifteen train sections for a movement by rail, we can realize the titanic task of transporting twenty-five such corps, numbering between 800,000 and 1,000,000 men, with nearly 400,000 animals and 70,000 vehicles, and requiring nearly 3,000 train sections, over

three or four trunk lines of railroad for a distance averaging more than two hundred miles. To move such a host without confusion, congestion, or delay seems almost impossible. Yet the apparently impossible has been accomplished. The great mobilizations of Germany and France are unquestioned historic facts.

That their accomplishment has been possible is entirely due to the organization and constant preparedness of these nations, the one strongly centralized and under the iron discipline of monarchy, the other the extreme opposite, a republic, more democratic than our own, under the spur of patriotism and self-imposed duty.

Contrast of Our Mobilization of 1916

Let us contrast the orderly and methodical mobilization of millions that has just been described with that of our National Guard in June, 1916.

Under the act of 1903, commonly known as the Dick Bill, the militia of the United States was organized under Federal patronage, a bureau of militia affairs was established, and a tentative organization into tactical divisions was made.

The whole area of the country was divided into twelve divisional districts, each comprising a State or group of States that was to furnish its quota toward the establishment of one tacti-

cal division. These militia divisions, together with the four infantry and two cavalry divisions into which the regular army serving within our continental limits was to be organized, were to constitute the first line of defense, the mission of which was to hold an enemy at bay until the great army of volunteers should have time to organize and train.

Careful and painstaking plans, requiring on the part of the officers charged therewith fully as much thought and labor as were required of the German or French officers in the preparation of their mobilization plans, were made, and steps were taken by the various departments to carry out these plans as far as was possible to them in time of peace.

The organized militia, under which name the state forces were known before the passage of the National Defense Act, and the National Guard, the designation with which it was endowed by the act, were state troops, and therefore, instead of mobilizing by divisions, decentralized from all other authority than that of the division commander, were to be mobilized by states. Mobilization points were designated previously within the several states for the mobilization of the militia thereof.

To supply the necessary equipment, which perforce must be supplied by the Federal government when the National Guard is taken into the

service of the United States, depots were established at various points by the Quartermaster Corps of the army, wherein were deposited the necessary equipment to supplement that in the hands of the organizations and complete the fitting out of the troops for field service. This equipment had been in most, if not in all cases, carefully verified, packed and marked for shipment to the designated point, so that it might be started toward its destination at a moment's notice. Therein the officers charged with this duty fulfilled their duty to the very best of their ability, and credit is due them for their foresight. At the same time, it should be noted that in a well-planned mobilization the necessary equipment is on hand at the mobilization point, ready for issue when the men appear.

The organizations were mobilized by companies and small units at their home stations and were brought by their officers to the mobilization points. Being on a volunteer basis, some of them came, and those who did not desire to do so remained at home. Their places were generally filled by raw men gathered hastily, regardless of their lack of training and possibly their physical incapacity, the only object on the part of the commander being to report at the mobilization point with the requisite number of men to be recognized as an organization and received into the Federal service.

On arrival at the mobilization point, mustering officers met the units; the men must then be physically examined, must express their willingness to take the form of oath required of them to serve the United States, and must then be sworn into the service before the equipment could be issued to them.

Many failed to report; a large percentage was rejected by the Federal examining physicians, and others refused to take the Federal oath. Only a small percentage of the men who had received training as National Guardsmen or organized militia were finally found in the ranks of the mobilized troops.

The National Guard organizations had always been materially below the maximum strength required for organizations in time of war, the infantry company having an authorized peace strength of sixty-five men, as against a former war strength of one hundred and twenty-eight and a maximum strength under the National Defense Act of one hundred and fifty. Units of cavalry, field artillery, and the auxiliaries were likewise far below the strength required of them in war.

With the defections and rejections, the number of men who had received even the partial training that had been required of our state troops fell to less than one-third the maximum strength, and the gaps had to be filled with raw recruits.

Contrast this with the other system, in which every man who reports is a trained and disciplined soldier, and in which the number of trained men available is far in excess of the number required, leaving a numerous reserve at the depots to fill the casualties of battle.

Recruiting was at once begun and continued, but at no time from the call to arms on June 18, 1916, until the end of the year and later, was any organization recruited to maximum strength, and the average of all the mobilized National Guard shows them to be below the minimum strength prescribed for units of the regular army in time of peace, which is the standard for all our troops.[1]

Service in war against Mexico might have been popular, and it is believed that many of the young men who volunteered believed that they were to see some of the excitement and danger of war service. When they were undeceived, and found that protective service on the border was all that they would see, their enthusiasm waned and they desired only to get back to their homes. Likewise, recruiting fell off, and the recruiting officers could not fill their organizations even with raw recruits. Few of them could become enthusiastic over the principle that the ends of war may be

[1] It cost the government approximately $60 per recruit during the period of recruiting; this included only the expenses of the recruiting parties and not the equipment of clothing of the new soldier.

attained without fighting, though the show of force must be made.

Returning to the mobilization point, we find that, while the men have been gathering, the property that had previously been issued to the States had to be received back by the United States, and be checked both as to quantity and condition, requiring another grievous delay.[1] The new property shipped by the Quartermaster Corps for the equipment of the additional men, and of the extra units that had to be organized, must be issued and proper charges made therefor, causing still further delay.

The ignorance of regulations governing the care of and accounting for property on the part of the newly mobilized officers resulted in their spending most of their time in administrative work when they should have been with their troops, preparing them for field service. Confusion and delay were supreme.

The ideal divisional organization that had been so carefully worked out in the plans of the Militia Bureau was completely lost from sight and was never resurrected during the mobilization nor subsequent concentration. The troops were mobilized by States and sent to the border in a helter-skelter order, following no plan (fortunately none was needed under the emergency),

[1] This is necessary to protect the interests of the nation and of the several States.—Ed.

and had to be received as separate units and utilized according to the requirements of the situation.[1]

After they had been concentrated for some time on the Mexican border, the scattered units were united into provisional brigades and divisions, which bore no resemblance to the original tactical units that had been provided for on paper. Only two of the original units survived; New York and Pennsylvania had organized a division each and these went to the border with their organization intact. The others disappeared.

None of the units ever reached the maximum strength required by law; few of them reached the minimum.

None of them left behind an adequate depot system to keep the ranks filled in case they should have to enter a campaign and suffer losses. Nothing was done to fill up the ranks to the strength prescribed as a minimum for organizations further than to establish voluntary recruiting stations in which the recruiting was entirely ineffective. There was no reserve behind the National Guard.

[1] The situation following the clash at Carrizal called for an immediate reenforcement of the small force on the border. We could not hold troops, fairly well equipped and efficient till less fit units of the division were built up. In some cases months passed before units could be accepted under the law. Hence our carefully prepared plans for divisional organizations had to be abandoned.

Contrast this state of affairs with an effective foreign mobilization, in which every unit leaves the mobilization point at the maximum strength, leaving behind enough trained men in the depot troops to keep it at that strength during a serious campaign.

In a foreign service a captain of infantry knows that he will always have two hundred and fifty men in his company; the major that he will have a thousand in his battalion; and the colonel that he will command three thousand men. The size and form of his tools are fixed and he can go ahead and perform his task, basing all his calculations on a fixed strength. In our service, with companies below maximum strength and without reserves, the captain, major, and colonel can never count on carrying through any piece of work, for they never will have the strength on which they should be able to count; their campaign losses cannot be replaced, and their organizations dwindle as time goes on until only an ineffective remnant is left.[1]

The mobilization of 1916 was ordered on June 18. Such was the tardiness of the assembly and movement of the troops that the first or-

[1] This causes a breaking strain on administrative and supply departments. We have tabulated the exact amount of material and foods required for normal organizations at peace and war strength with weights, cubic contents, etc. To supply complete organizations is simple. But where all vary in numbers each has to be computed separately—no two invoices, no two bills of lading are alike.

ganizations did not reach Texas until June 28, and then only a few advance units arrived. The bulk of the troops did not move for nearly a month after the call, due to delays in their mobilization and preparation.

In 1914 Germany within two weeks had completed her concentration of more than a million men on the frontiers of France, Luxemburg, and Belgium, moving them an average distance of more than two hundred miles.

It took us more than a month to assemble about one hundred thousand men in Texas, New Mexico, and Arizona, in a movement by rail that averaged about a thousand miles. The difference in distance would account for about two extra days, so that the main delay in our movement was due to delay in the mobilization itself.

Let us examine the efficiency of the troops after they had completed the mobilization on the border, after training had been systematically begun, and at a time when it was possible that they would be called upon for actual service in the field.

Every organization was carefully inspected by a competent officer of the regular army, usually of the grade of colonel, lieutenant colonel, or major, men of from twenty to thirty years service who were familiar with the military problem of the nation and had had ample service with

troops to fit them to pass judgment upon the efficiency of any body of troops.

These reports in almost every case are to the effect that, at the time of the inspections, which took place during August and September of 1916, from one to two months after the arrival of the troops on the border, they could not be made ready for actual field service in less than from four to six months, even against irregular Mexican troops. Nothing better could be expected of troops composed of approximately one-third partly trained National Guardsmen and the remainder raw recruits, enlisted after the call was made, under the leadership of officers who themselves were only partly trained.[1]

The foreign unit that left the mobilization point was ready for *immediate* field service under trained officers.

The question immediately suggests itself, "Can we have an effective mobilization?"

We can. But we must first adopt an effective military system, independent of the volunteer system, based on universal and compulsory military service.

[1] The following statement of a National Guard officer on return from the border shows the value of the lesson taught; he voices the opinion of a large percentage of the guard: "I shall soon be without officers in my squadron; all are going to resign and I feel inclined to so myself. We have come to the conclusion that we have fooled ourselves and fooled the country long enough. The militia system is not the solution of the military problem in this country. The only solution is compulsory military service."

We shall then find the proper number of trained men in our first line to mobilize promptly, move rapidly, and operate effectively against any enemy that we may have to encounter.

The framework of our military machine will be in existence at all times, and will not have to be improvised after the outbreak of war. The grouping of the trained men about that framework will give us the effective force whenever it may be needed, and with the framework and the men, plans can be made that can be carried out.

Our officers are fully as intelligent and as well prepared professionally as those of any other nation. The material for reserve officers is of an exceptionally superior quality.

They can do the work if they are given the proper tools, and the proper tools will come if we adopt the proper system.

The men who will fill the ranks as noncommissioned officers and privates are inferior to none on earth in intelligence and physique, and in the high manly qualities of courage, fortitude, and fearless initiative.

Our resources are almost unlimited; equipment and supplies can therefore be always adequate in both quantity and quality.

We lack only the necessary organization as a people and as a government to be fully prepared to meet any emergency that may come upon us.

Should the principle of universal military service be adopted, it would not be long before plans could be made, upon sound bases, for the prompt mobilization of an adequate force, properly organized and trained, and which could be counted upon to meet at our shores any invader, and to repel him, whatever his numbers, organization, or training. Even more, the very existence of such a force will tend to deter any predatory nation from an attempt to violate our sovereignty, and will constitute a solid guarantee for lasting peace, the peace of the strong man armed in his own defense.

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Appendix I

Extracts from the Hearings of Major General Leonard Wood Before the Senate Committee on Military Affairs (Senator George E. Chamberlain, Chairman) December 18, 1916

The Chairman: General Wood, the subcommittee which has been appointed by the Committee on Military Affairs is holding hearings upon the subject of military training for the purpose of the creation of a reserve force, or for any other purpose that may make the young men of the country available for duty, and we would like to hear from you upon that subject. You understand, of course, that there are two or three measures pending upon the subject of universal military training.

General Wood: Yes, sir.

The Chairman: One bill is S. 1695, another is a suggested substitute prepared by the General Staff, and one by Captain Moseley.

General Wood: Do you wish me to make a statement upon that subject?

The Chairman: We would like you to proceed in your own way, General Wood.

General Wood: I believe, Mr. Chairman, that

in addition to our regular force, including in this the naval establishment, we must have a citizenry so trained that they will be reasonably efficient soldiers in case of need. I think that training as a permanent proposition, on the general lines proposed in your bill, will ultimately meet the demands of the situation.

I think there are some modifications which will suggest themselves as time goes on. I believe, however, that world conditions are such that we are not in a position to wait for any considerable period of time to develop our trained forces; nor should we adopt any system which will postpone the immediate training of young men who have reached the military age. Each of the two bills before your committee presents certain excellent features.

I believe we should start as soon as practicable the training of the youth on the lines proposed in your bill, which are substantially along the lines of the Australian system. We should immediately begin the training of the youths who are physically fit during the year in which they become 19 years of age, and I estimate this number as 500,000. I say the year in which they become 19 years of age, fearing that if we take them in the year in which they become 18 we shall have half of our 500,000 fit for military service arriving at 18 years of age after the 1st of July; in other words, half of them would be

17 when they came to us, which is rather young. I feel we should start in with the training of young men in their nineteenth year with the least possible delay and concentrate our entire available energy upon them, if necessary leaving the instruction of the younger boys to be taken up after we have the system in smooth running order. I am convinced that a period of six months' intensive training will be sufficient to give us a reasonably effective and well-trained private soldier. I make this statement as a result of four years of observation of training under the intensive system which we have had in force at the military training camps—a system under which, it was estimated by a board of regular officers, as much was accomplished in one month as is accomplished in four and a half months under average conditions and methods of instruction in the regular service.

That is to say, they have rated one month of intensive training as we give it, which is something over eight hours a day, as equivalent to about four and a half months under average conditions in the regular establishment.

I think that is a conservative estimate. In actual hours of work it is equivalent to that performed in an enrollment of three years in an average organization of the militia. It is a character of training that is so intensive that you could not impose a system of that degree of in-

tensity upon any body of men for six months; they would become stale. So we should have to adopt a rather less intensive system, say one equal to 3 to 1, compared with the work we do in the regular establishment, so that out of our six months of intensive training we would give young men the same number of hours under arms and the same amount of training they would receive in eighteen months in the regular establishment. If anyone proposed eighteen months in the regular establishment as the period of training, and that all physically fit men should take it, the bulk of the people would say it is too long. But six months' training under the organization which we are employing in these training camps would be in value and accomplishment fully 4½ to 1 what we give the men in the regular establishment. We could not maintain for six months the high pressure of intensive methods which can be applied for one or two months, and as I stated, it would be necessary for us to reduce somewhat the hours of work. We could maintain for six months a system which would give us three times as much work of a purely military character as is given in the average organization of the regular establishment. I desire to emphasize this statement as strongly as possible.

And I say again that six months of intensive training in camp, all of it under conditions where

the men have nothing to do but receive and absorb military instruction, would be sufficient. The officers and some of the higher noncommissioned officers would require a longer period of training. Speaking now of the private soldier, we should be able to cover pretty thoroughly the instruction in any arm of the service. The instruction of officers would probably have to be carried on on the general lines laid down in the Australian system, with which you are familiar, or on the lines of the Swiss system as modified to fit conditions in this country. There are about 1,030,000—estimates vary — men reaching the military age—that is, the age of 18—every year. I think it is safe to assume that not over one-half of those men would be fit for military service—that is, for intensive training. So we would have about 500,000 men a year coming up for this period of intensive training, which ought to begin as soon as the season permits in the spring, say, May 1, and be terminated at the end of October of that year. The men would terminate their training, in other words, in the year in which they became 19 years of age, and then they stand ready for the year of service with the colors on teaching 21.

When I say a year of service with the colors I do not mean a year of service with the colors in the sense of living constantly in barracks or in uniform, but I mean that beginning July 1 of the

year in which they are 21 and ending with June 30 of the year in which they are 22, every man who has had this intensive training during his nineteenth year and is physically fit should serve one year in a troop battery or other organization of the citizen forces of the military establishment. The year of service should be commenced by one month of field training. In other words, a course of repetition, in addition to the six months, which he gets in his nineteenth year. It is rather doubtful whether we would be able to give them a full month. We might have to shorten that period of repetition training to a lesser period on account of men in business, but there certainly should be a minimum of twenty days—a month, if we can give it—of work in camp.

Having finished this period of intensive training in camp, men remain for the balance of the year in a Federal organization maintained at war strength, completely equipped in every way and ready for service. Its officers will be men who have been trained in the Officers' Reserve Corps or elsewhere. Its entire enlisted personnel will consist of men who have had six months of intensive training followed by a course of repetition. Their status, so far as freedom of movement, business, etc., are concerned, would be that which now pertains in the case of the National Guard. Each year's class will represent about

500,000 men, or about double the present National Guard at war strength. Its force will be composed of young men at the age of physical best and minimum dependent and business responsibility. They will have known in advance that they are to render this service during their twenty-first year, and in case of a call such as has recently been made those affected will be men who have made preparation for just such a contingency. They will be men in the full vigor of youth and whose withdrawal for service will cause a minimum of hardship and inconvenience. If conditions should exist which render it probable that more than 500,000 men might be needed in case of a call, the class should be held for the colors for an additional year, which would hold in a condition of immediate readiness the class of 21 and class of 22, or 1,000,000 men. If additional classes were needed they could be called by successive years, 23, 24, etc. I should include in the first-line troops men from 21 to 28, inclusive. In other words, I would have the service begin with the twenty-first year and terminate with the twenty-eighth, or a period of eight years. This would give us a total of approximately 4,000,000 men who have had as good training as it is possible to give them in that time. Ordinary casualties would somewhat reduce this total, but it would be safe to say that we should have available at least 3,700,000 in this first-line

group and probably more. I do not think it an exaggeration to say that the classes of 21, 22, and 23 will have had as good training and be as well informed and prepared for the discharge of their duties as the bulk of the enlisted personnel of our regular establishment to-day, including the regular reserves.

The Chairman: Suppose you had the number of men you speak of trained in the manner you suggest, how long, if they were called into service, would they have to be trained to become proficient or efficient soldiers?

General Wood: They will be as well trained as are our regular reservists when they report and should be immediately available. It is proposed to give them thirty days' repetition training when called to the colors.

The Chairman: Yes.

General Wood: They will size up very well with the men of the regular organization to-day and be better trained than half of them. I do not think that the people at large realize that the regular army is a constantly changing organization. The men are constantly coming and going. Under the system of intensive training we are going to give the men instruction under conditions which will be at least equivalent to three to one in the regular service in effectiveness and efficiency. I speak with absolute certainty from experience in this matter; at the end of six

months you will have men as efficient on the average as the average of men in the United States army at the end of eighteen months.

Senator Brady: Do you think that six months' intensive training is equal to three to one of regular army training?

General Wood: Absolutely. There is in my mind no question about it. A great deal of time of our regular establishment is wasted time in a military sense. The men have much nonmilitary work to do. They are busy, but it is not military work. Our men are stationed in small posts, a handful here and a handful there. Organizations are only partially filled up, and when turned out for instruction oftentimes there is only a small portion of what should be a full organization present. The officers have many detached duties; the troops are very seldom assembled in large bodies for the instruction of the higher units. Under the training system which I trust will be inaugurated all organizations will be at war strength; they will be in camp under conditions which will reduce nonmilitary work to the minimum; the training will be most vaulable to our officers, for it will be the first time most of them have had an opportunity to handle a war-strength organization appropriate to their grade under conditions which will permit the maximum amount of time being devoted to purely military work.

The Chairman: Have you ever made any estimate as to the cost that such training would entail upon the government?

General Wood: I have not gone into it in detail. It is largely a matter of equipment, food, and transportation, and the wear and tear of arms and equipment. There should be no pay for this service. It should be part of a man's service to the United States, to the nation. I will make an approximate estimate and insert it.

COST FOR SIX MONTHS' TRAINING FOR A HALF MILLION MEN PER YEAR BY INTENSIVE METHOD

Only infantry, cavalry, and field artillery considered in estimates. Training for special arms would be such a small percentage of the total as not to change estimates materially.

	Men
Infantry, 206 regiments	400,670
Cavalry, 20 regiments	26,800
Field artillery, 60 regiments	73,020
	500,490

Cost for individuals, six months	
Infantry:	
Ration	$54.00
Clothing	16.65
Quartermaster field equipment (estimated to be replaced every four periods)	3.20
Ordnance (maintenance)	6.73
Medical (first-aid package)	.47
Ammunition	8.74
Per infantryman	$89.79
Total infantry (400,670)	$35,976,159.30

Appendix

Cavalry[1] (calculated in same way, allowing maintenance of one horse for every five men under training):	
Per cavalryman	$114.05
Total cavalry (26,800)	3,056,540.00
Field artillery[1] (calculated in same way, allowing one-fifth horses for full field service):	
Per field artilleryman	118.28
Total field artillery (73,020)	8,636,805.60
Total infantry	$35,976,159.30
Total cavalry	3,056,540.00
Total field artillery	8,636,805.60
	$47,669,504.90
Transportation and subsistence en route ($15 per man)	7,507,350.00
Total for individuals	$55,176,854.90

Initial expenses (reduced number of animals for Cavalry and Field Artillery used in calculating shelter)

Arm	Regiments	Camp	Cantonment
Infantry	206	$12,346,082	$16,872,430
Cavalry	20	1,051,660	1,523,700
Field artillery	60	2,590,080	3,741,000
Total	..	$15,987,822	$22,137,130

[1] It is appreciated that the proportion of these arms under training is not that required for the best organizations of the army. The expense of training these arms, however, is considerably greater than that of infantry and the essentials of discipline, physical training, and organization can be obtained as well by the infantry training. In the event of war we should probably call in case of need additional classes of those trained in the cavalry and field artillery. For example, if we would call four classes of cavalry we should have (allowing for casualties) approximately 100,000 trained men, and three classes of field artillery would give us 200,000 trained artillerists.

As the wear and tear on camp equipment requires replacement of practically all after twelve months' use and the cantonments will last ten to fifteen years with average annual expense for maintenance of 2½ per cent initial cost, it is assumed the cantonments will be established and maintenance calculations have been made on that basis.

The equipment for transportation, for purchase of animals for cavalry and other mounted organizations, for any individual equipment for soldiers, for special equipment for the various arms and corps, are not included in the initial expenses, as all of these are necessary for the reserve stores of any troops which we may have to raise, and are now presumably being accumulated for our reserves, volunteers, and militia, in the place of which this civilian force is being contemplated.

Maintenance and overhead charges

Additional clerical help and office supplies (War Department and department headquarters)	[1] $1,000,000.00
Reserve officers, noncommissioned officers, and cooks (pay and allowances)	[2] 18,000,000.00
Mileage for officers	300,000.00
Maintenance of cantonments (2½ per cent of cost)	[3] 555,000.00
Maintenance of roads, etc., in cantonments	100,000.00
Water	455,000.00
Light	120,000.00
Fuel (kitchen and incinerators)	2,000,000.00
Crude oil (incinerators and latrines)	480,000.00

[1] This is less than estimate for similar services at present. Simpler system contemplated.

[2] As a comparison the National Guard pay is $27,000,000. Act approved August 29, 1916.

[3] To this must be added replacement of cantonments once every ten to fifteen years.

General camp sanitation	$600,000.00
Hire of camp sites and damage claims	750,000.00
Office supplies, clerical force in camps	500,000.00
Medical supplies and maintenance of equipment	1,026,000.00
Maintenance of camp communication	20,000.00
Transportation of supplies	1,000,000.00
Camp and maneuver transportation (repairs, gasoline, oil)	[1] 1,500,000.00
Maintenance of animals for mounted officers and orderlies	[2] 2,769,000.00
	$31,175,000.00
Total	$86,351,854.00
Allowing a reasonable amount for unforeseen contingencies, in round numbers a grand total of	$88,000,000.00

The above estimates are based largely on the limited data available from our training camps. As numbers increase and experience improves administrative methods the cost should decrease.

Expenses of Training the 21-Year Class for a Period of Fifteen or Thirty Days

No cantonments or permanent camp equipment will be required. The training will be entirely in field maneuvers, using the transportations supplied for the six months' men. Officers and men will have only the equipment authorized for individuals in field service. Allowing the same cost for transportation to and from concentration points we should have for 500,000:

	15 Days	30 Days
Transportation	$7,500,000	$7,500,000
Other expenses	6,250,000	12,500,000
	$13,750,000	$20,000,000

[1] Based on experience at Plattsburg.
[2] One-half Field Service Regulation allowance.

Any appropriation made should, of course, be expendable for any purpose not inconsistent with the intent of the law. That is, the appropriation should be expendable for the various items entering into the estimate at the discretion of the Secretary of War. This will be necessary for efficient administration, especially at first.

It is believed, also, that railroad rates should be fixed at not to exceed one-third normal rates, and it is thought the railroad companies will be willing to do this as their share in the preparedness movement. A large percentage of the cost, especially for the 21-year class, is for transportation to and from the rendezvous. If this can be done, the cost for fifteen days' training will be reduced to $8,750,000 and for thirty days' training to $15,000,000; while the larger estimate for the six months' training will be reduced from $88,000,000 to $83,000,000.

We should all bear equally our share of this burden of service for the nation. I am confident that from the discipline, habits of regularity, and promptness will result a great increase in our economic efficiency as a nation, a great improvement in morality through discipline and its resulting respect for authority, for law, and the constituted authorities. I believe that our murder rate will be divided by 10. It is about 126 per million now, as compared with 12 to 13 in Switzerland. . . .

The Chairman: Would it be possible, in your opinion, to train men in civil life and at the same time make them proficient as soldiers?

General Wood: I think we could train men to be efficient soldiers while we are training them

along industrial lines, but it would take a great deal of time. It would mean that we should have to hold men probably two or three times the period I am recommending, and it would also mean the equipment of the plants at training camps which would be enormously expensive, and the maintenance at these plants of instructors in all lines of industry, and it would, in a way, amount to failure to take advantage of the opportunities for this training which are offered in the industrial field, where the boy has a chance to learn his trade under conditions more favorable on a whole than the government could afford to maintain. It would cover an unnecessary long time and would dissipate his interest in military training. I do not think it would be either practical or desirable. The actual situation in this country to-day is that we have no defense in any way adequate to meet an attack by a great power. We are without supplies, organization, officers, or trained men. In this project of general training, we are dealing with a proposition which is vital to national life. We must place something in the way of a trained force behind our little regular army, and we can only do it on lines consistent with the ideals of democracy through adopting a system of universal military training.

Universal military training is absolutely opposed to militarism. It is the only purely

democratic method. It exemplifies the basic principle of democracy; that is, that equality of obligation goes hand in hand with equality of opportunity and privilege. This principle is the very foundation of the republic. We must get this training and get it quickly if we are going to have an adequate military defense in emergency. . . .

Senator Brady:[1] Mr. Fisher, I think, was striving to reach the same goal that you are, only through a different channel. He was very much in favor of training along the line you suggested, only for another purpose.

General Wood: But the real result would be a big mercenary army—an army of professional soldiers: the very antithesis of what we want. We want an army of professional soldiers, big enough for the peace needs of the nation, but we want back of it a citizenry trained to arms and trained under conditions which will cause the minimum of interference with their economic and educational careers.

Senator Brady: I won't ask you to go into detail to-day, General, but in the final preparation of your statement I would be pleased to have your outline quite fully along this line what you think should be done.

[1] Mr. Walter Fisher had advocated a combined training in military art and industrial pursuits, the pay of the soldier to be increased so as to insure enlistments.

General Wood: I will give it in a few words. We are not contemplating an army which will be trained and organized for a war of aggression or conquest. What we want is a citizen force back of our regular establishment, organized and trained so as to command the respect of the world sufficiently to make it certain an attack upon us would be costly and doubtful of outcome; an organization which would insure our voice in the world's affairs receiving consideration; one which would enable us to pursue our just policies without threat of interference. We want a system which would place at the President's call for such duty as the National Guard was called for, a force of young soldiers free from binding business, professional, and family obligations. We want a force which can be turned out without asking great sacrifices of certain classes to the advantage of others. We want no more bounties for service in war, and no more widows and orphans unless a struggle for existence demands the call of class after class. And we want a system which will call for a tax of personal service rather than a tax for the payment of others to perform service. That is where Dr. Fisher is wrong. The citizen should do his soldier duty as an obligation and not for pay. And the army should not be expected to train men for civil pursuits beyond making them strong and reliable. Of course,

when men go into service at the call of the government—I mean service which follows their being called out as trained soldiers—they must receive such pay as the government determines to be right and proper—something which will serve to take care of their families; but the service during training, that is, during the 19-year period, should not be paid for. It probably would be well to give a certain amount to pay for the month of intensive training which is given at the beginning of the year of service with the colors, but the pay given should be very small and should not be measured in terms of wage-earning capacity outside.

The question appeals to me as a soldier more forcibly than it does to Mr. Fisher, for whom I have the greatest respect. He does not, however, realize or appreciate the fact, nor do many people, that from the standpoint of reasonable preparedness to meet attack by any of the great military nations of to-day this country is in effect unprepared. We need, and need immediately, a system for the training of men, and we should push forward the manufacture of munitions and equipment with all possible speed. The lessons of the present militia mobilization with its incompleteness of equipment, its shortages in all directions, extending to the present moment in many things, in the matter of clothing, shortages in artillery, shortages in various

directions, all indicating the need of a systematic and well-thought-out preparation, and that without delay.

EXTRACTS FROM THE CROSS EXAMINATION OF MAJOR GENERAL LEONARD WOOD, BY SENATOR BLAIR LEE OF MARYLAND, BEFORE THE SENATE COMMITTEE ON MILITARY AFFAIRS, JANUARY 31, 1917

Senator Lee of Maryland: General Wood, you are pretty well committed by your statements, both official and otherwise, to an approval of the Swiss military system, are you not?

General Wood: Yes, sir; adapted, I have always said, to this country. Of course our State arrangements make it a little more difficult of application.

Senator Lee of Maryland: On January 27, 1916, you approved the Swiss system before the Military Committee of the House, and later, on page 772 of the House reports, you say:

The system which I believe we should adopt is one similar to that adopted by Australia and Switzerland.

Again, at page 777, appears the following answer by you:

General Wood: Yes. Take the Swiss system. Their murder rate is about 12 per 1,000,000, against a rate of 124 per 1,000,000 here. Taking these figures into consideration it would seem that their military training

has done some good. They are running their entire military establishment for about $7,000,000 a year. They could put a quarter of a million men in the line in forty-eight hours, and they would have 200,000 more in reserve. This is done by means of acceptance of the general principle that every man owes something to the nation's service. That is what we will have to come to.

In Senate Document 360, of the last session, I published some direct information from the Swiss military authorities. It took them ten days to get out 200,000 men. You are a little too complimentary, then?

The Chairman: The territory there is so much smaller than ours.

Senator Lee of Maryland: They say themselves it took them ten days to get out the 200,000 men.

Senator Brady: What are you reading from?

Senator Lee of Maryland: I was reading from General Wood's statement to the House committee of last year.

General Wood: I am taking the official report. It would take 36 to 48 hours to mobilize the first 220,000.

Senator Lee of Maryland: You approved, in that way, the Swiss military system, and as late as November 1, 1916, you wrote an introduction to a book on the Swiss system by Kuenzli, in which you described that system as excellent?

Appendix

General Wood: Excellent in principle.

Senator Lee of Maryland: I want to compare with you the militia clause of the United States Constitution and article 21, the equivalent in the Swiss constitution. Of course you are familiar with our militia clause, so I will not read that. I will print them in the record opposite each other.

(The Swiss military clause read as follows:)

So far as military reasons do not prevent, corps of troops shall be formed from soldiers of the same Canton. The composition of these bodies of troops, the maintenance of their effective strength, the appointment and promotion of their officers shall belong to the Cantons, subject to general regulations which shall be issued to them by the Confederation. (Art. 21.)

(Extract from Constitution of the United States, 1787.)

Congress shall have power:

To provide for organizing, arming, and disciplining the militia and for governing such part of them as may be employed in the service of the United States, reserving to the States, respectively, the appointment of the officers and the authority of training the militia according to the discipline prescribed by Congress. (Sec. 8, Art. 1.)

Congress shall have power:

To make all laws necessary and proper for carrying into execution the foregoing powers. (Sec. 8 of Art. I.)

The words "general regulations" in the Swiss constitution, article 21, seem to take the place of "discipline prescribed by Congress" in our Constitution?

General Wood: I have analyzed that. I have the full Swiss law. The idea I have been trying to drive home in reference to the Swiss system is that it rests primarily upon the universal training.

Senator Lee of Maryland: You certainly emphasized that.

General Wood: Yes; the citizenship obligation, the better bodies from the training, the better morals from the self-control resulting from the discipline and respect for law and the constituted authorities. A more efficient man from the economic standpoint, because of the habits of promptness and thoroughness and the habit of doing things as told and when told; a better citizen and a better national spirit.

These are some of the results which will come from universal training and obligation for service. There are some points where we must modify the Swiss system to fit our conditions.

Senator Lee of Maryland: What I wanted to bring your mind to and your constitutional conscience to is the dual control feature of the Swiss constitution.

General Wood: That is unsound and defective in Switzerland if it exists so as to in any way hamper full Federal control.

Senator Lee of Maryland: There is more dual control in the Swiss constitution than in ours, is there not?

General Wood: I think I can disprove that. I will not enter into an argument, however, with so able a constitutional lawyer as you are, Senator.

Senator Lee of Maryland: I will reread these words to you from the Swiss constitution:

> The composition of these bodies of troops, the maintenance of their effective strength, the appointment and promotion of their officers, shall belong to the Cantons.

General Wood: Under the direction of the Federal government.

Senator Lee of Maryland (continuing):

> Subject to general regulations which shall be issued to them by the Confederation.

Subject to "the discipline prescribed by Congress" is what we say.

General Wood: We do not prescribe discipline under the new law; we cannot; the governors can refuse to accept it.

Senator Lee of Maryland: Then it is a constitutional question in your mind?

General Wood: It is, indeed.

Senator of Maryland: So far as the wording of these two constitutional articles is concerned, the Swiss constitutional provision seems to give more dual control than we have.

General Wood: I will answer that, Senator, in full.

Senator Lee of Maryland: If we can show that in training her army Switzerland has solved constitutional questions; as a matter of fact, if we can show they have got an efficient army, and that under their laws and constitution they have more dual control than we have, then Switzerland has solved your control doubts, has she not?

General Wood: You will have to state the latter part of your question again. Switzerland has, as I understand their law, what is in effect absolute Federal control, and I think you will find that such control is made effective by Federal orders and regulations, and we have no effective Federal control. Every Swiss has to be trained in effect under Federal, not under cantonal, instructions, and he is a well-trained man, and when he responds to call he will probably be an effective soldier.

Senator Lee of Maryland: The Swiss officers are appointed by the Cantons, are they not?

General Wood: They are under certain restrictions. You will find the Federal government fixes the standard.

Senator Lee of Maryland: For all basic units all officers are appointed by the Cantons.

General Wood: I shall have to look that up.

Senator Lee of Maryland: We find that in the Swiss law.

General Wood: Then it is a mistake.

Senator Lee of Maryland: It operates, does it not?

General Wood: I do not think you are right in the assumption that the Federal government does not exercise control.

Senator Lee of Maryland: I will read you the section of the Swiss law, section 156, which is as follows:

156. The Cantons appoint the officers of the basic units and the officers of infantry that are on the staffs of fusileer battalions composed thereof.

The Federal Council appoints officers of battalion staffs, and also company officers when the company is formed of men from different Cantons.

General Wood: The Federal government fixes the qualifications of the officers absolutely.

Senator Lee of Maryland: Certainly, just as we can; just as this present law proposes to do. The Swiss system gives a very rigid process of

selection, involving the approval of superior officers.

General Wood: I know.

Senator Lee of Maryland: Diligent service as a private and as a noncommissioned officer, and schooling of noncommissioned officers, and a school for commissioned officers, from all of which processes the candidate for commission has to issue successfully, and then he gets a commission from his Canton. And there is only one case in which the Canton cannot give the commission, and that is where a Canton does not provide the proper number of qualified officers.

General Wood: But they all do that, as a rule.

Senator Lee of Maryland: No; I think you are wrong about that. On rare occasions a Canton fails to have qualified men to appoint, and then the appointment goes outside of that Canton.

General Wood: The Federal government prescribes all the qualifications for officers.

Senator Lee of Maryland: Yes; as our Federal government can under the act of June 3.

General Wood: And the control of the Swiss federation in military matters is practically absolute. No Canton has any voice when once a condition of war exists.

Senator Lee of Maryland: General, I have got to go upon the laws and constitution as pub-

lished. The Swiss army is prepared in time of peace, and the commissions issue then. Now, I will call your attention to these statutes a little more in detail so you will appreciate them. It is of vast importance to us if we can operate successfully a militia system with State responsibilities, dual control, as a safeguard to the liberties of the country, the Swiss having created an efficient army under equivalent provisions of their constitution, and I will therefore proceed and call your attention to more details.

General Wood: Let me answer that in detail in written language, if you please.

The comparison of the Swiss and American Constitutions, made in Senate Document 360, Sixty-fourth Congress, first session, pages 9 and 10, to my mind is misleading.

In Switzerland the army consists of the able-bodied trained citizens of the nation, and all Swiss must perform military service. (See sec. 1.) In the United States the army consists only of the officers and enlisted force authorized by Congress, and the Constitution makes a marked distinction between the army and the militia.

In Switzerland the Federal Council is in charge of military establishments. In the United States the President is commander in chief of the army and navy but not of the citizen force (militia), except when called into actual service of the United States. Consequently the Federal control in Switzerland is continuous over all military forces, while in the United States Federal control over the militia is only when it is called into the service of the United States, and the Constitution limits this call into the serv-

ice of the United States to three purposes—enforcing the law, suppressing insurrection, and repelling invasion.

In Switzerland the Cantons have authority over the military forces of their territory in so far as this is not limited by the Federal constitution or laws, and military instruction of every kind is under the control of the federation. In the United States the States have absolute government of the militia when not called into Federal service, and this includes also the training of the militia.

In Switzerland the composition of the troops, their recruitment, and the appointment of their officers belongs to the Cantons subject to general regulations which are issued to them by the federation. In the United States the appointment of officers, the authority of training the militia, and the government of the militia when not called into the service of the United States for one of the three specific purposes stated above is expressly reserved to the States.

In Switzerland there is no limitation to the general regulations which may be issued by the confederation. In the United States, when the militia is not called into Federal service, Congress has power to provide only for organizing, arming, and disciplining this citizen force, and the debates of the constitutional convention show that the power so extended in respect to discipline was to be interpreted as limiting the central government to prescribing the character of drill in order that the forces of all the States might be drilled under the same rule of tactics.

The Swiss system makes a fair distribution of the military burden—the United States system is as inequitable a plan as could be devised.

In a word the Swiss constitution and laws call for universal training of all physically fit citizens and give the central government continuous control over the citizen army; the United States constitution and laws do not provide for this training and limits complete control to actual hostilities or internal trouble (or the

imminence thereof), thus delaying effective action until the time when the troops are needed in a crisis.

It has been held that Congress has never exercised its full power over the armed forces of the United States. It is true Congress has never exercised its full power to raise and support armies; if it had it would have put into operation a law such as has been put into operation in Switzerland, i. e., make effective a system by which all citizens would be trained for military duty. On the other hand, it is believed that Congress has exercised full power over the militia, and has even gone beyond its power in the so-called National Defense Act.

During the discussion in the last session of Congress of the various bills and amendments submitted as to military legislation there was much said about the powers of the Federal government over the militia, and the decision in the case of Houston *v.* Moore was quite frequently cited. It seems to have been lost sight of that this case involved merely the question of punishment by the central government or by the State of a militiaman who refused to respond when called to service under a call authorized by the constitution. The case in no way had to do with the appointment of officers, with governing the militia when not in the service of the United States, with training the militia, or with any other of the greater points under consideration. The decision of the Supreme Court in this case was the broadest interpretation of the constitution ever made on the subject and was dissented from by Chief Justice Story, who has always been considered the ablest of our constitutional lawyers.

Some of the militia clauses of the National Defense Act are, in my opinion, an infringement of the constitution. The dual oath requires the officers and enlisted men to obey both the President and the governor. Under the constitution the President has no right to govern the militia except when called into the service of the United States. The authority given the President to appoint officers to command militia units,

the system of courts-martial prescribed, the requirements for the adjutants general of States to make certain specific reports, all can be interpreted only as a government of the militia when not in the service of the United States, and consequently are unconstitutional. The Supreme Court undoubtedly would sustain any militiaman who refused to be governed by these sections of the law and who appealed from the sentence of any court-martial appointed thereunder. At least these points are open to question.

The law contains no means for enforcing its provisions. To my mind a distinct evidence of the recognition of the law's weakness appears in the provision that States which do not conform shall be refused their portion of the Federal allotment. In other words, Congress gives the State militia money and if the State miiltia does not obey the law takes the money back again. No other punishment is provided. Doubtless the framers of the law recognized that no other punishment could be enforced.

The law may be made inoperative in any State by the governor, who is the commander in chief of the militia of that State. If the governor provides no recruiting machinery the number of the militiamen required by the law cannot be obtained. If the governor pays no attention to the requirements of the law as to qualifications of the National Guard officers and proceeds to appoint some men not having those qualifications, those men are officers of the militia regardless of any action the central government may take, since the appointment of the officers of the militia is expressly reserved to the States. If the governor gives orders to his officers and militia contradictory to those given by the President. the militia, both officers and enlisted men, are under orders to obey the governor as well as the President, and, since the constitution gives the government of the militia to the States when it is not in the service of the United States, then the logical duty of the militiamen is to give the orders of their governor precedence.

Appendix

In my opinion, the National Defense Act promises to produce a political force rather than a military force unless, due to the individual patriotism of its members, this is prevented. The resignation of over 600 militia officers and the general statement that the present enlisted men are not willing to reenlist for such service is an indication that the militia itself does not intend to permit a system so disastrous to continue. It certainly should be recognized by every Congressman that, with 800 militiamen in each congressional district, all of them voters, and all eligible to hold offices of trust and profit, local elections and even general elections may be controlled by such a body. Even the election or reelection of a Congressman may be dependent upon his attitude toward the militia and his efforts to obtain greater privileges for that class of citizens. . . .

The foregoing will indicate why I am unable to agree with Senator Lee that the militia under our constitution may be made the same as the Swiss army under the constitution of Switzerland, though a comparison of selected sections may seem to justify the belief that there is similarity. A careful consideration of the whole situation, especially as the two systems operate in practice, shows them to be utterly dissimilar and irreconcilable.

Appendix II

Naval Strength and Resources

No discussion of the military strength of our nation can be complete without mention of the navy—that branch of our national defense which gives us a breathing space if attacked suddenly. The navy is our first weapon of defense or of offense. The three branches of our service have been described as follows:

> The navy is like the rapier of a duelist, with it he both thrusts and parries; the coast defenses are like the dagger he holds in his left hand to ward off any blow breaking through his guard; the mobile army is the friend who stands back to back with him to defend against attack he cannot meet with the first two, or to turn and fight side by side with him if he assume the offensive.

A complete discussion of the navy and its needs cannot be given in this series. This appendix, a partial reprint of the report of the Director of Naval Intelligence, March, 1916, with some short comments, will give the careful reader a just view of our naval strength. He may then form his own opinion as to just how far it may be depended upon to perform its intended part in our scheme of national defense.

Appendix

Information Concerning Some of the Principal Navies of the World

The Office of Naval Intelligence has compiled the following tables from the best available data; and while these tables may be regarded as substantially correct, it is possible that inaccuracies may occur, for the reason that few countries besides the United States publish all the data concerning their fighting strength, and even greater efforts are being made abroad to maintain secrecy.

Due to the present European war, no data can be included herein of a date later than July 1, 1914.

DEFINITIONS

Armor: Steel plates secured to sides and important parts of ships as a protection against gunfire or close external explosions.

Armament: Offensive weapons with which ships are equipped, such as guns and torpedoes and their tubes.

Caliber: Diameter of the bore of a gun.

Displacement: The weight of water displaced by the floating vessel; in other words, the weight of the vessel.

Draft: Depth of ship from keel to water line.

Freeboard: Height from water line to main deck.

Knot: Sea mile—2,000 yards.

Speed: The speed of vessels is given in knots per hour.

Battleship: A large vessel capable of steaming on the high seas, protected by heavy armor and carrying a heavy armament, including some guns of large caliber.

Predreadnaught: A battleship, usually not over 16,000 tons displacement, having a mixed battery —main battery of heavy guns, 8-inch or above; intermediate battery of guns from 4-inch to 7-inch inclusive, and secondary battery of small guns less than 4-inch.

Dreadnaught: One-caliber big-gun battleship of 18,000 tons displacement or more and a speed of at least 18 knots. These vessels have a main battery of all big guns (11 inches or more in caliber) and no intermediate battery. The secondary or torpedo defense battery is composed of guns of 3-inch to 5-inch caliber.

Superdreadnaught: This is a term applied to later vessels of the dreadnaught type, where there are more than 10 big guns in the main battery, or a very large displacement, 25,000 tons or more, and a speed of from 21 to 25 knots. In these the secondary or torpedo defense battery

is usually of 5-inch or 6-inch caliber. It is a rather indefinite term.

Cruiser: A vessel capable of steaming on the high seas with sufficient freeboard to keep dry in moderate weather, and with sufficient space for stores and fuel to permit her to steam great distances without having to visit port to refuel, etc. The protection and armament depend on the class.

Light cruiser: A cruiser whose vitals are protected by a light armored deck, and whose gun positions may have light protection. The displacement varies from 1,500 to 5,000 tons, and speed from 16 to 30 or more knots, according to various designs.

Scout: A light cruiser in which protection and armament is considerably reduced to allow for large fuel storage space and machinery installation of great power to give as high a speed as possible.

Armored cruiser: A cruiser protected by moderately heavy armor on sides, etc., armed with heavy guns, 8-inch to 12-inch as a rule, and capable of steaming at high speed, 18 to 22 knots (approximately). The armament is usually mixed as in the predreadnaught battleship. This class differs from the predreadnaught battleship in that the armor and armament is lighter and

the speed greater. The displacement varies from about 9,000 to 16,000 tons.

Battle cruiser: An armored cruiser having the general dreadnaught characteristics of armament, i.e., main battery of all big guns (11 inches or more in caliber), eight or more, and no intermediate battery. Armor heavier than armored cruisers but lighter than dreadnaughts, and very high speed, from 25 to 30 knots and over, and large displacement, from 17,000 tons up.

Torpedo craft: Vessels whose main offensive armament is the torpedo and which rely on high speed, small size, and a few light guns for defense. Generally capable of steaming on the high seas.

Torpedo boats: Small torpedo craft of from 50 to about 300 tons displacement. Speed varies from about 19 to 29 knots. Small or no guns.

Destroyers: Larger torpedo craft of from about 350 to 1,100 tons displacement, carrying more torpedo tubes and heavier guns than torpedo boats (about 4-inch caliber), and having greater freeboard and speed (from about 25 to 33 knots).

Submarines: Vessels capable of running either on the surface of the water or submerged. The offensive armament is the torpedo and some of the later boats are equipped with light guns

for defensive purposes when running on the surface.

Monitor: A heavily armored, very low freeboard, light-draft vessel carrying two or more guns of the largest caliber (10 inches and above). Low speed, about 13 knots.

TABLE I

RELATIVE ORDER OF WARSHIP TONNAGE

Order on July 1, 1914 (tonnage completed).		As would have been the case if vessels building July 1, 1914, had been completed.	
Nation	Tonnage	Nation	Tonnage
Great Britain.....	2,158,250	Great Britain.....	2,713,756
Germany.....	951,713	Germany.....	1,304,640
United States.....	774,353	United States.....	914,218
France.....	665,748	France.....	899,915
Japan.....	519,640	Russia.....	701,253
Italy.....	285,460	Japan.....	699,916
Russia.....	270,861	Italy.....	497,815
Austria-Hungary.....	221,526	Austria-Hungary....	372,008

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TABLE II

WARSHIP TONNAGE OF THE PRINCIPAL NAVAL POWERS. NUMBER AND DISPLACEMENT OF WARSHIPS BUILT AND BUILDING OF 1,500 OR MORE TONS AND OF TORPEDO CRAFT OF MORE THAN 50 TONS

(July 1, 1914)

Type of Vessel	GREAT BRITAIN[1]			
	Built		Building	
	No.	Tons	No.	Tons (estimated)
Battleships[2] (dreadnaught type)	20	423,350	16	421,000
Battleships[3] (predreadnaught)	40	589,385	..	.....
Coast-defense vessels[4]	..	.....	..	.....
Battle cruisers[5]	9	188,200	1	28,500
Armored cruisers	34	406,800	..	.....
Cruisers[6]	74	382,815	17	67,000
Torpedo-boat destroyers	167	125,850	21	21,770
Torpedo boats	49	11,488	..	.....
Submarines	75	30,362	22	17,236
Total tons built and total tons building	..	2,158,250	..	555,506
Total tons built and building	2,713,756			

[1] Colonial vessels included.

[2] Battleships having a main battery of all big guns (11 inches or more in caliber).

[3] Battleships of (about) 10,000 or more tons displacement, whose main batteries are of more than one caliber.

[4] Includes smaller battleships and monitors.

[5] Armored cruisers having guns of largest caliber in main battery and capable of taking their place in line of battle with the battleships. They have an increase of speed at the expense of carrying fewer guns in main battery and a decrease in armor protection.

[6] All unarmored warships of more than 1,500 tons are classed as cruisers. Scouts are considered as cruisers in which battery and protection have been sacrificed to secure extreme speed. The word "protected" has been omitted because all cruisers except the smallest and oldest now have protective decks.

The following vessels are not included in the table:

Ships over 20 years old from date of launch, unless they have been reconstructed and rearmed within 5 years.

Torpedo craft over 15 years old.

Those not actually begun or ordered, although authorized.

Transports, colliers, repair ships, torpedo depot ships, or other auxiliaries.

Vessels of less than 1,500 tons, except torpedo craft.

Torpedo craft of less than 50 tons.

Vessels undergoing trials are considered as completed.

Appendix

TABLE II—*Continued*

WARSHIP TONNAGE OF THE PRINCIPAL NAVAL POWERS. NUMBER AND DISPLACEMENT OF WARSHIPS BUILT AND BUILDING OF 1,500 OR MORE TONS AND OF TORPEDO CRAFT OF MORE THAN 50 TONS

(July 1, 1914)

Type of Vessel	GERMANY			
	Built		Building	
	No.	Tons	No.	Tons (estimated)
Battleships[1] (dreadnaught type)	13	285,770	7	187,052
Battleships[2] (predreadnaught)	20	242,800	..	.....
Coast-defense vessels[3]	2	8,168	..	.....
Battle cruisers[4]	4	88,749	4	110,175
Armored cruisers	9	94,245	..	.....
Cruisers[5]	41	150,747	5	26,900
Torpedo-boat destroyers	130	67,094	24	14,400
Torpedo boats	..	.....	..	.....
Submarines	27	14,140	18	14,400
Total tons built and total tons building	..	951,713	..	352,927
Total tons built and building	1,304,640			

[1] Battleships having a main battery of all big guns (11 inches or more in caliber).

[2] Battleships of (about) 10,000 or more tons displacement, whose main batteries are of more than one caliber.

[3] Includes smaller battleships and monitors.

[4] Armored cruisers having guns of largest caliber in main battery and capable of taking their place in line of battle with the battleships. They have an increase of speed at the expense of carrying fewer guns in main battery and a decrease in armor protection.

[5] All unarmored warships of more than 1,500 tons are classed as cruisers. Scouts are considered as cruisers in which battery and protection have been sacrificed to secure extreme speed. The word "protected" has been omitted because all cruisers except the smallest and oldest now have protective decks.

The following vessels are not included in the table:

Ships over 20 years old from date of launch, unless they have been reconstructed and rearmed within 5 years.

Torpedo craft over 15 years old.

Those not actually begun or ordered, although authorized.

Transports, colliers, repair ships, torpedo depot ships, or other auxiliaries.

Vessels of less than 1,500 tons, except torpedo craft.

Torpedo craft of less than 50 tons.

Vessels undergoing trials are considered as completed.

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TABLE II—*Continued*

WARSHIP TONNAGE OF THE PRINCIPAL NAVAL POWERS. NUMBER AND DISPLACEMENT OF WARSHIPS BUILT AND BUILDING OF 1,500 OR MORE TONS AND OF TORPEDO CRAFT OF MORE THAN 50 TONS

(July 1, 1914)

Type of Vessel	UNITED STATES[1]			
	Built		Building	
	No.	Tons	No.	Tons (estimated)
Battleships[2] (dreadnaught type)	8	189,650	4	117,800
Battleships[3] (predreadnaught)	22	309,282	..	.....
Coast-defense vessels[4]	4	12,900	..	.....
Battle cruisers[5]	..	.....	..	.....
Armored cruisers	10	140,080	..	.....
Cruisers[6]	15	75,625	..	.....
Torpedo-boat destroyers	51	35,068	11	11,926
Torpedo boats	13	2,528	..	.....
Submarines	30	9,220	[7]19	10,139
Total tons built and total tons building	..	774,353	..	139,865
Total tons built and building	914,218			

[1] Does not include Idaho and Mississippi, sold to Greece.

[2] Battleships having a main battery of all big guns (11 inches or more in caliber), except South Carolina and Michigan, which are not considered as dreadnaughts because of low speed.

[3] Battleships of (about) 10,000 or more tons displacement, whose main batteries are of more than one caliber; also U. S. S. South Carolina and Michigan.

[4] Includes smaller battleships and monitors.

[5] Armored cruisers having guns of largest caliber in main battery and capable of taking their place in line of battle with the battleships. They have an increase of speed at the expense of carrying fewer guns in main battery and a decrease in armor protection.

[6] All unarmored warships of more than 1,500 tons are classed as cruisers. Scouts are considered as cruisers in which battery and protection have been sacrificed to secure extreme speed. The word "protected" has been omitted because all cruisers except the smallest and oldest now have protective decks.

[7] Includes 3 submarines authorized in 1913; contract for fourth not then awarded.

The following vessels are not included in the table:

Ships over 20 years old from date of launch, unless they have been reconstructed and rearmed within 5 years.

Torpedo craft over 15 years old.

Those not actually begun or ordered, although authorized.

Transports, colliers, repair ships, torpedo depot ships, or other auxiliaries.

Vessels of less than 1,500 tons, except torpedo craft.

Torpedo craft of less than 50 tons.

Vessels undergoing trials are considered as completed.

Appendix

TABLE II—*Continued*

WARSHIP TONNAGE OF THE PRINCIPAL NAVAL POWERS. NUMBER AND DISPLACEMENT OF WARSHIPS BUILT AND BUILDING OF 1,500 OR MORE TONS AND OF TORPEDO CRAFT OF MORE THAN 50 TONS

(July 1, 1914)

Type of Vessel	FRANCE			
	Built		Building	
	No.	Tons	No.	Tons (estimated)
Battleships[1] (dreadnaught type)	3	69,276	9	216,748
Battleships[2] (predreadnaught)	18	262,675	..	.....
Coast-defense vessels[3]	1	8,800	..	.....
Battle cruisers[4]	..	.....	..	.....
Armored cruisers	20	201,724	..	.....
Cruisers[5]	9	46,095	..	.....
Torpedo-boat destroyers	84	35,812	3	2,653
Torpedo boats	135	13,426	..	.....
Submarines	64	27,940	22	14,766
Total tons built and total tons building	...	665,748	..	234,167
Total tons built and building	899,915			

[1] Battleships having a main battery of all big guns (11 inches or more in caliber).

[2] Battleships of (about) 10,000 or more tons displacement, whose main batteries are of more than one caliber.

[3] Includes smaller battleships and monitors.

[4] Armored cruisers having guns of largest caliber in main battery and capable of taking their place in line of battle with the battleships. They have an increase of speed at the expense of carrying fewer guns in main battery and a decrease in armor protection.

[5] All unarmored warships of more than 1,500 tons are classed as cruisers. Scouts are considered as cruisers in which battery and protection have been sacrificed to secure extreme speed. The word "protected" has been omitted because all cruisers except the smallest and oldest now have protective decks.

The following vessels are not included in the table:

Ships over 20 years old from date of launch, unless they have been reconstructed and rearmed within 5 years.

Torpedo craft over 15 years old.

Those not actually begun or ordered, although authorized.

Transports, colliers, repair ships, torpedo depot ships, or other auxiliaries.

Vessels of less than 1,500 tons, except torpedo craft.

Torpedo craft of less than 50 tons.

Vessels undergoing trials are considered as completed.

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TABLE II—*Continued*

WARSHIP TONNAGE OF THE PRINCIPAL NAVAL POWERS. NUMBER AND DISPLACEMENT OF WARSHIPS BUILT AND BUILDING OF 1,500 OR MORE TONS AND OF TORPEDO CRAFT OF MORE THAN 50 TONS

(July 1, 1914)

Type of Vessel	JAPAN			
	Built		Building	
	No.	Tons	No.	Tons (estimated)
Battleships[1] (dreadnaught type)	2	41,600	4	122,400
Battleships[2] (predreadnaught)	13	191,380	..	.....
Coast-defense vessels[3]	2	9,086	..	.....
Battle cruisers[4]	2	55,000	2	55,000
Armored cruisers	13	138,483	..	.....
Cruisers[5]	13	57,915	..	.....
Torpedo-boat destroyers	50	20,487	2	1,676
Torpedo boats	27	3,017	..	.....
Submarines	13	2,672	2	1,200
Total tons built and total tons building	..	519,640	..	180,276
Total tons built and building	699,916			

[1] Battleships having a main battery of all big guns (11 inches or more in caliber).

[2] Battleships of (about) 10,000 or more tons displacement, whose main batteries are of more than one caliber.

[3] Includes smaller battleships and monitors.

[4] Armored cruisers having guns of largest caliber in main battery and capable of taking their place in line of battle with the battleships. They have an increase of speed at the expense of carrying fewer guns in main battery and a decrease in armor protection.

[5] All unarmored warships of more than 1,500 tons are classed as cruisers. Scouts are considered as cruisers in which battery and protection have been sacrificed to secure extreme speed. The word "protected" has been omitted because all cruisers except the smallest and oldest now have protective decks.

The following vessels are not included in the table:

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Torpedo craft over 15 years old.

Those not actually begun or ordered, although authorized.

Transports, colliers, repair ships, torpedo depot ships, or other auxiliaries.

Vessels of less than 1,500 tons, except torpedo craft.

Torpedo craft of less than 50 tons.

Vessels undergoing trials are considered as completed.

Appendix

TABLE II—*Continued*

WARSHIP TONNAGE OF THE PRINCIPAL NAVAL POWERS. NUMBER AND DISPLACEMENT OF WARSHIPS BUILT AND BUILDING OF 1,500 OR MORE TONS AND OF TORPEDO CRAFT OF MORE THAN 50 TONS

(July 1, 1914)

Type of Vessel	RUSSIA			
	Built		Building	
	No.	Tons	No.	Tons (estimated)
Battleships[1] (dreadnaught type)	..	.....	8	181,844
Battleships[2] (predreadnaught)	7	98,750	..	.....
Coast-defense vessels[3]	2	10,380	..	.....
Battle cruisers[4]	..	.....	4	128,000
Armored cruisers	6	63,500	..	.....
Cruisers[5]	9	52,845	8	53,600
Torpedo-boat destroyers	91	36,748	44	53,664
Torpedo boats	14	2,132	..	.....
Submarines	30	6,506	19	13,284
Total tons built and total tons building	..	270,861	..	430,392
Total tons built and building	701,253			

[1] Battleships having a main battery of all big guns (11 inches or more in caliber).

[2] Battleships of (about) 10,000 or more tons displacement, whose main batteries are of more than one caliber.

[3] Includes smaller battleships and monitors.

[4] Armored cruisers having guns of largest caliber in main battery and capable of taking their place in line of battle with the battleships. They have an increase of speed at the expense of carrying fewer guns in main battery and a decrease in armor protection.

[5] All unarmored warships of more than 1,500 tons are classed as cruisers. Scouts are considered as cruisers in which battery and protection have been sacrificed to secure extreme speed. The word "protected" has been omitted because all cruisers except the smallest and oldest now have protective decks.

The following vessels are not included in the table:

Ships over 20 years old from date of launch, unless they have been reconstructed and rearmed within 5 years.

Torpedo craft over 15 years old.

Those not actually begun or ordered, although authorized.

Transports, colliers, repair ships, torpedo depot ships, or other auxiliaries.

Vessels of less than 1,500 tons, except torpedo craft.

Torpedo craft of less than 50 tons.

Vessels undergoing trials are considered as completed.

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TABLE II—*Continued*

WARSHIP TONNAGE OF THE PRINCIPAL NAVAL POWERS. NUMBER AND DISPLACEMENT OF WARSHIPS BUILT AND BUILDING OF 1,500 OR MORE TONS AND OF TORPEDO CRAFT OF MORE THAN 50 TONS

(July 1, 1914)

Type of Vessel	ITALY			
	Built		Building	
	No.	Tons	No.	Tons (estimated)
Battleships[1] (dreadnaught type)	3	62,644	7	187,150
Battleships[2] (predreadnaught)	8	96,100	..	.....
Coast-defense vessels[3]	..	.....	..	.....
Battle cruisers[4]	..	.....	..	.....
Armored cruisers	9	74,020	..	.....
Cruisers[5]	6	18,830	2	4,888
Torpedo-boat destroyers	36	16,807	15	14,203
Torpedo boats	68	11,584	2	272
Submarines	19	5,475	8	5,842
Total tons built and total tons building	..	285,460	..	212,355
Total tons built and building	497,815			

[1] Battleships having a main battery of all big guns (11 inches or more in caliber.

[2] Battleships of (about) 10,000 or more tons displacement, whose main batteries are of more than one caliber.

[3] Includes smaller battleships and monitors.

[4] Armored cruisers having guns of largest caliber in main battery and capable of taking their place in line of battle with the battleships. They have an increase of speed at the expense of carrying fewer guns in main battery and a decrease in armor protection.

[5] All unarmored warships of more than 1,500 tons are classed as cruisers. Scouts are considered as cruisers in which battery and protection have been sacrificed to secure extreme speed. The word "protected" has been omitted because all cruisers except the smallest and oldest now have protective decks.

The following vessels are not included in the table:

Ships over 20 years old from date of launch, unless they have been reconstructed and rearmed within 5 years.

Torpedo craft over 15 years old.

Those not actually begun or ordered, although authorized.

Transports, colliers, repair ships, torpedo depot ships, or other auxiliaries.

Vessels of less than 1,500 tons, except torpedo craft.

Torpedo craft of less than 50 tons.

Vessels undergoing trials are considered as completed.

Appendix

TABLE II—*Continued*

WARSHIP TONNAGE OF THE PRINCIPAL NAVAL POWERS. NUMBER AND DISPLACEMENT OF WARSHIPS BUILT AND BUILDING OF 1,500 OR MORE TONS AND OF TORPEDO CRAFT OF MORE THAN 50 TONS

(July 1, 1914)

Type of Vessel	AUSTRIA-HUNGARY			
	Built		Building	
	No.	Tons	No.	Tons (estimated)
Battleships[1] (dreadnaught type)	3	60,030	5	118,010
Battleships[2] (predreadnaught)	6	74,613	..	.....
Coast-defense vessels[3]	6	41,700	..	.....
Battle cruisers[4]	..	.....	..	.....
Armored cruisers	2	13,380	..	.....
Cruisers[5]	5	13,815	5	21,216
Torpedo-boat destroyers	18	9,450	..	.....
Torpedo boats	39	6,852	24	5,886
Submarines	6	1,686	6	5,370
Total tons built and total tons building	..	221,526	..	150,482
Total tons built and building	372,008			

[1] Battleships having a main battery of all big guns (11 inches or more in caliber).

[2] Battleships of (about) 10,000 or more tons displacement, whose main batteries are of more than one caliber.

[3] Includes smaller battleships and monitors.

[4] Armored cruisers having guns of largest caliber in main battery and capable of taking their place in line of battle with the battleships. They have an increase of speed at the expense of carrying fewer guns in main battery and a decrease in armor protection.

[5] All unarmored warships of more than 1,500 tons are classed as cruisers. Scouts are considered as cruisers in which battery and protection have been sacrificed to secure extreme speed. The word "protected" has been omitted because all cruisers except the smallest and oldest now have protective decks.

The following vessels are not included in the table:

Ships over 20 years old from date of launch, unless they have been reconstructed and rearmed within 5 years.

Torpedo craft over 15 years old.

Those not actually begun or ordered, although authorized.

Transports, colliers, repair ships, torpedo depot ships, or other auxiliaries.

Vessels of less than 1,500 tons, except torpedo craft.

Torpedo craft of less than 50 tons.

Vessels undergoing trials are considered as completed.

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TABLE II—*Concluded*

WARSHIP TONNAGE OF THE PRINCIPAL NAVAL POWERS. NUMBER AND DISPLACEMENT OF WARSHIPS BUILT AND BUILDING OF 1,500 OR MORE TONS AND OF TORPEDO CRAFT OF MORE THAN 50 TONS

(July 1, 1915)

Type of Vessel	United States			
	Built		Building	
	No.	Tons	No.	Tons (estimated)
Battleships[1] (dreadnaught type)	8	189,650	7	213,800
Battleships[2] (predreadnaught)	22	309,282	..	.....
Coast-defense vessels[3]	4	12,900	..	.....
Battle cruisers[4]	..	.....	..	.....
Armored cruisers	10	140,080	..	.....
Cruisers[5]	15	75,625	..	.....
Torpedo-boat destroyers	57	41,417	11	12,354
Torpedo boats	6	1,082	..	.....
Submarines	36	12,338	22	11,839
Total tons built and total tons building	..	782,374	..	237,993
Total tons built and building	1,020,367			

[1] Battleships having a main battery of all big guns (11 inches or more in caliber), except South Carolina and Michigan, which are not considered as dreadnaughts because of low speed.

[2] Battleships of (about) 10,000 or more tons displacement, whose main batteries are of more than one caliber; also U. S. S. South Carolina and Michigan.

[3] Includes smaller battleships and monitors.

[4] Armored cruisers having guns of largest caliber in main battery and capable of taking their place in line of battle with the battleships. They have an increase of speed at the expense of carrying fewer guns in main battery and a decrease in armor protection.

[5] All unarmored warships of more than 1,500 tons are classed as cruisers. Scouts are considered as cruisers in which battery and protection have been sacrificed to secure extreme speed. The word "protected" has been omitted because all cruisers except the smallest and oldest now have protective decks.

The following vessels are not included in the table:

Ships over 20 years old from date of launch, unless they have been reconstructed and rearmed within 5 years.

Torpedo craft over 15 years old.

Those not actually begun or ordered, although authorized.

Transports, colliers, repair ships, torpedo depot ships, or other auxiliaries.

Vessels of less than 1,500 tons, except torpedo craft.

Torpedo craft of less than 50 tons.

Vessels undergoing trials are considered as completed.

Comment: The significant point here is the fact that of the eight great nations listed the program of the United States was the smallest in 1914, and though the later program has increased somewhat it is still smaller than that in 1914 of three of the nations. This, considered in connection with the fact that the belligerent nations are known to have enlarged their programs enormously, makes our position as the third naval power, tonnage alone considered, exceedingly precarious.

TABLE III

Active Personnel

Rank	July 1, 1914								July 1, 1915
	England	Germany	United States	France	Japan	Russia	Italy	Austria-Hungary	United States
Admirals of the fleet	3	2	[1] 1	.....	2	.....	.....	.....	[1] 1
Admirals	12	6	.....	.....	6	12	1	1	(2)
Vice admirals	22	12	.....	15	19	20	10	2	(3)
Rear admirals	58	22	[4] 25	30	38	21	19	15	[5] 25
Captains and commanders	702	154	212	360	270	346	137	80	[5] 211
Other line officers	2,508	2,220	1,680	1,419	1,965	1,378	753	558	[5] 1,778
Midshipmen at sea	639	448	.....	77	119	.....	73	175	.....
Engineer officers	837	577	.....	505	811	538	326	164	.....
Medical officers	593	340	336	[6] 390	[7] 364	286	[6] 259	84	[8] 383
Pay officers	750	276	231	211	388	.....	228	[9] 224	221
Naval constructors	122	162	75	187	[10] 135	519	107	[11] 141	77
Chaplains	147	30	24	.....	.....	85	.....	11	27
Warrant officers	2,740	3,183	867	[12] 147	1,569	.....	1,340	387	1,012
Enlisted men	119,597	65,797	52,566	60,505	50,050	49,258	36,660	[12] 17,689	52,444
Marine officers	465	[14] 177	341	.....	.....	.....	.....	.....	[15] 344
Enlisted men (marines)	[13] 21,414	[14] 5,791	9,915	.....	.....	.....	.....	.....	9,965
Total	150,609	79,197	66,273	63,846	55,736	52,463	39,913	19,531	66,488

[1] The admiral of the navy.

[2] The officers designated by the President as commanders in chief of the Atlantic, Pacific, and Asiatic fleets hold the rank of admiral while so serving.

[3] The officers designated by the President as second in command of the Atlantic, Pacific, and Asiatic fleets hold the rank of vice admiral while so serving.

[4] The United States had on July 1, 1914, temporarily, as extra numbers, due to promotion for war service, and to officers restricted by law to engineering duty on shore only 6 flag officers, 20 captains, 9 commanders, 6 lieutenant commanders, and 1 lieutenant.

[5] In this list are included the following extra numbers: 7 rear admirals, 20 captains, 9 commanders, 5 lieutenant-commanders, and 1 lieutenant.

[6] Includes pharmacists.

[7] Includes pharmaceutical officers.

[8] Includes 32 officers of the Dental Corps.

[9] Includes 21 officers of the Judge Advocate's Corps.

[10] Includes 50 ordnance and 10 hydrographic engineers.

[11] Includes 4 hydrographic engineers.

[12] Includes adjudants principaux; does not include premier maitres and maitres.

[13] Includes 4,000 recruits for 42 days.

[14] Marine infantry and seaman artillery.

[15] Includes 10 graduates of the Naval Academy, whose commissions as second lieutenants were issued a few days after July 1, 1915.

[16] Includes 3,130 men of the Coast Guard.

Comment: Omitting the marines, a large percentage of which are on shore duty, the personnel of the U. S. Navy consists of 56,232 officers and enlisted men in 1916, which would place us fourth instead of third in ability to man our ships even if the other nations had made no increase in personnel during the war. Of officers accompanying the fleet, Japan has 3,982, France has 3,007, Russia has 2,601, and the United States, 2,485. Three nations having fighting vessels of less total tonnage than that of our navy are therefore better equipped with officers to use the vessels they have and could bring more ships into action.

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TABLE IV

Table of "Personnel per 1,000 Tons" for All Principal Powers

(July 1, 1914)

Nation	Tonnage built and building	Personnel actives	Actives per 1,000 tons	Personnel reserves [1]	Percentage of reserves to actives	Total actives and reserves	Total actives and reserves per 1,000 tons
England	2,713,756	150,609	55.5	65,065	43	215,674	[2] 79.5
Germany	1,304,640	79,197	60.7	82,400	104	161,597	123.9
France	899,915	63,846	70.9	95,236	149	159,082	176.7
Japan	699,916	55,736	79.6	30,550	55	86,286	123.3
Italy	497,815	39,913	80.2	15,892	40	55,805	112.1
Austria-Hungary	372,008	19,531	52.5	23,431	120	42,962	115.5
Russia	678,818	52,463	77.3	[3] 75,000	[3] 143	[3] 127,463	[3] 187.7
United States	[4] 894,859	66,273	[4] 74.0	7,728	11.6	74,001	[4] 82.7

(Dec. 8, 1915)

United States	[4] 991,003	66,880	[4] 67.5	[5] 8,651	12.1	75,531	[4] 76.2

[1] The item "Personnel reserves" for each nation, except United States, is a *minimum*. For the United States the figures are exact in all cases.

[2] Nothing is known concerning increases in personnel of foreign navies since the beginning of the war except that England has voted an increase of 150,000 actives. If, therefore, England has completed all the above tonnage, and has called in all her reserves (which she undoubtedly has), England now has no less than 365,065 men in active naval service, or at least 134.5 "men per 1,000 tons." All belligerents have most undoubtedly called in all their reserves. How many more were enlisted due to the war is not known except in the case of England, as stated above.

[3] At least.

[4] The tonnage of United States (for confidential reasons) *does not include submarines*. If this submarine tonnage were included, the items "Actives per 1,000 tons" and "Total actives and reserves per 1,000 tons" would be *decreased*.

[5] Naval Militia, estimated, 8,417; Naval Reserves, 234; total reserves, 8,651.

The above table showing the United States to maintain in personnel per ton only 74% the number of the next smaller nation, and less than half the personnel per ton of some other nations, indicates plainly why so many of our ships are in reserve. Attention is invited to footnote (2) in which it is shown that England has now 134.5 men per thousand tons. Her low rate in time of peace (slightly below our own) can be maintained because of her great preponderance.

An examination of the above table in connection with Table No. 2 shows that the best we can hope for even with our superior ships is to be a good fifth in naval strength. A ship is useless without a trained personnel, and naval officers state that a considerable period is required even for a trained personnel, transferred to a new ship, to "find" themselves.

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TABLE V

VESSELS BUILT

(July 1, 1914)

Nation	Battleships, dreadnaught type[1]	Battleships[2]	Battlecruisers[3]	Armored cruisers	Cruisers[4]	Destroyers	Torpedo boats	Submarines	Coast-defense vessels[5]
England	20	40	[6] 9	34	[6] 74	[6] 167	49	[6] 75	0
Germany	13	20	4	9	41	130	0	27	2
United States	8	22	0	10	15	51	13	30	4
France	3	18	0	20	9	84	135	64	1
Japan	2	13	2	13	13	50	27	13	2
Russia	0	7	0	6	9	91	14	30	2
Italy	3	8	0	9	6	36	68	19	0
Austria-Hungary	3	6	0	2	5	18	39	6	6
United States to July 1, 1915	8	22	0	10	15	57	6	36	4

[1] Battleships having a main battery of all big guns (11 inches or more in caliber), except the U. S. S. South Carolina and Michigan, which are not considered dreadnaughts on account of low speed.

[2] Battleships of (about) 10,000 tons or more displacement, and having more than one caliber in the main battery and U. S. S. South Carolina and Michigan.

[3] Armored cruisers having guns of largest caliber in main battery and capable of taking their place in line of battle with the battleships. They have an increase of speed at the expense of carrying fewer guns in main battery, and a decrease in armor protection.

[4] Includes all unarmored cruising vessels above 1,500 tons displacement.

[5] Includes smaller battleships and monitors.

[6] Includes vessels of colonies.

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TABLE VI

VESSELS BUILDING OR AUTHORIZED

(July 1, 1914)

Nation	Battleships, dreadnaught type	Battle cruisers	Cruisers	Destroyers	Torpedo boats	Submarines
England [1]	16	1	[2] 17	[2] 21	0	22
Germany [3]	7	4	5	24	0	18
United States	7	0	0	11	0	28
France	9	0	0	3	0	22
Japan [4]	4	2	0	2	0	2
Russia [5]	8	4	8	44	0	19
Italy	7	0	2	15	2	8
Austria-Hungary	5	0	5	6	24	6
United States to July 1, 1915	9	0	0	17	0	40

[1] England has no continuing shipbuilding policy, but usually lays down each year 4 or 5 armored ships, with a proportional number of smaller vessels.

[2] Includes vessels of colonies.

[3] Germany has a continuing shipbuilding program, governed by a fleet law authorized by the Reichstag. For 1914 there were authorized 1 battleship, 1 battle cruiser, 2 cruisers, 12 destroyers. Eventual strength to consist of 41 battleships, 20 armored cruisers, 40 cruisers, 144 destroyers, 72 submarines.

[4] $78,837,569 authorized to be expended from 1911 to 1917 for the construction of war vessels.

[5] Russian shipbuilding program provides for the completion by 1918 of 4 battle cruisers, 8 small cruisers, 36 destroyers, and 18 submarines.

All countries now at war have greatly increased their building programs, so above notes do not hold good after July, 1914.

The following vessels are *not* included in the table:

Ships over 20 years old from date of launch, unless they have been reconstructed and rearmed within 5 years.

Torpedo craft over 15 years old.

Transports, colliers, repair ships, converted merchant vessels, or any other auxiliaries.

Vessels of less than 1,500 tons, except torpedo craft. Torpedo craft of less than 50 tons.

NOTE.—Vessels undergoing trials are considered as completed.

Appendix

TABLE VII

Battleships and Armored Cruisers Prior to the Dreadnaught Type

(July 1, 1914)

Nation	Built [1]		
	Number	Tons	Guns, 8-inch and larger
GREAT BRITAIN			
Battleships	40	589,385	152 12" 8 10" 52 9.2"
Armored cruisers	34	406,800	68 9.2"
GERMANY			
Battleships	20	242,800	40 11" 40 9.4"
Armored cruisers	9	94,245	6 9.4" 44 8.2"
UNITED STATES			
July 1, 1914, battleships	22	309,282	20 13" 76 12"
July 1, 1915, battleships	22	309,282	104 8"
July 1, 1914, armored cruisers	10	140,080	16 10"
July 1, 1915, armored cruisers	10	140,080	24 8"
FRANCE			
Battleships	18	262,675	66 12" 6 10.8"
Armored cruisers	20	201,724	72 9.4" 68 [2] 7.6"
JAPAN			
Battleships	13	191,380	52 12" 32 10" 6 8"
Armored cruisers	13	138,483	16 12" 50 8"
ITALY			
Battleships	8	96,100	16 12" 8 10" 56 8"
Armored cruisers	9	74,020	19 10" 6 8"

[1] Ships over 20 years old from date of launch not included.
[2] 7.6-inch, largest caliber carried.

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TABLE VIII

DREADNAUGHT TYPE OF BATTLESHIPS, WITH CONTEMPORARIES OF OVER 18,000 TONS DISPLACEMENT, AND ARMORED CRUISERS OF INVINCIBLE TYPE (NOW CALLED BATTLE CRUISERS)

(July 1, 1914)

Nation	Built			Building, or authorised		
	No.	Tons	Guns	No.	Tons [1]	Guns [1]
GREAT BRITAIN						
Battleships	20	423,350	100 13.5″ 100 12″	16	421,000	20 13.5″ 112 15″
Battle cruisers	9	188,200	24 13.5″ 48 12″	1	28,500	8 13.5″
GERMANY						
Battleships	13	285,770	98 12″ 48 11″	7	187,052	24 15″ 40 12″
Battle cruisers	4	88,749	38 11″	4	110,175	32 12″
UNITED STATES						
Battleships	8	189,650	64 12″ 20 14″	7	213,800	80 14″
Battle cruisers	..	.....	.....	..	.....	.....
FRANCE						
Battleships	3	69,276	36 12″	9	216,748	90 13.4″ 12 12″
Battle cruisers	..	.....	.....	..	.....	.....
JAPAN						
Battleships	2	41,600	24 12″	4	122,400	48 14″
Battle cruisers	2	55,000	16 14″	2	55,000	16 14″
RUSSIA						
Battleships	..	.....	.....	8	181,844	96 12″
Battle cruisers	..	.....	.....	4	128,000	36 14″?
ITALY						
Battleships	3	62,644	38 12″	7	187,150	32 15″ 39 12″
Battle cruisers	..	.....	.....	..	.....	.....
AUSTRIA						
Battleships	3	60,030	36 12″	5	118,010	40 14″ 12 12″
Battle cruisers	..	.....	.....	..	.....	.....

[1] Estimated.

Appendix

TABLE VIII—*Concluded*

DREADNAUGHT TYPE OF BATTLESHIPS, WITH CONTEMPORARIES OF OVER 18,000 TONS DISPLACEMENT, AND ARMORED CRUISERS OF INVINCIBLE TYPE (NOW CALLED BATTLE CRUISERS)

(July 1, 1914)

	Built			Building, or authorized		
	No.	Tons	Guns	No.	Tons [1]	Guns [1]
BRAZIL						
Battleships	2	38,562	24 12"	[2] 1	30,000	8 or 10 15"
Battle cruisers	..	.....	.....	..	.....	.....
ARGENTINA						
Battleships	[3] 1	27,940	12 12"	1	27,940	12 12"
Battle cruisers	..	.....	.....	..	.....	.....
CHILE						
Battleships	..	.....	.....	2	56,000	20 14"
Battle cruisers	..	.....	.....	..	.....	.....
(Corrected to July 1, 1915)						
UNITED STATES						
Battleships	8	189,650	64 12" / 20 14"	9	277,800	104 14"
Battle cruisers	..	.....	.....	..	.....	.....

[1] Estimated.
[2] Authorized but apparently not yet laid down (1915).
[3] Ran trials in Sept., 1913, and is therefore considered completed for the purposes of this table, though not turned over to the Argentine Government until early in 1915.

Comment: The failure to provide battle cruisers for our navy has been demonstrated in all recent maneuvers to have been a serious error.

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TABLE IX

BATTLESHIPS, ARMORED CRUISERS, AND CRUISERS (SCOUTS) OF THE SIX PRINCIPAL NAVAL POWERS, LAUNCHED 1906–1913

Year	Battleships	Tonnage	Armored cruisers [1]	Tonnage	Cruisers	Tonnage	Total	Total tonnage
GREAT BRITAIN								
1906	3	50,900	2	29,200	..	.....	5	80,100
1907	3	55,800	4	66,350	..	.....	7	122,150
1908	2	38,500	..	.....	1	3,300	3	41,800
1909	2	39,150	1	18,750	6	25,920	9	83,820
1910	3	63,000	1	26,350	4	18,660	8	108,010
1911	5	115,500	3	63,950	5	22,620	13	202,070
1912	4	100,800	1	27,000	5	24,900	10	152,700
1913	4	105,000	1	28,500	5	23,320	10	156,820
Total	26	568,650	13	260,100	26	118,720	65	947,470
GERMANY								
1906	2	25,964	2	22,832	2	6,790	6	55,586
1907	..	.....	.....	.....	2	6,988	2	6,988
1908	4	74,408	1	15,550	2	7,824	7	97,782
1909	3	67,320	1	19,000	3	12,843	7	99,163
1910	1	22,440	1	22,637	..	.....	2	45,072
1911	3	72,000	1	22,637	4	21,652	8	116,287
1912	2	48,220	1	25,000	2	9,652	5	82,879
1913	3	76,164	2	54,175	1	4,900	6	135,239
Total	18	386,516	9	181,831	16	70,649	43	638,996
UNITED STATES								
1906	1	16,000	2	29,000	..	.....	3	45,000
1907	..	.....	..	.....	3	11,250	3	11,250
1908	3	52,000	..	.....	..	.....	3	52,000
1909	2	41,825	..	.....	..	.....	2	41,825
1910	1	21,825	..	.....	..	.....	1	21,825
1911	2	52,000	..	.....	..	.....	2	52,000
1912	2	54,000	..	.....	..	.....	2	54,000
1913	..	.....	..	.....	..	.....	..	.....
1914	2	55,000	..	.....	..	.....	2	55,000
Total	13	292,650	2	29,000	3	11,250	18	332,900

[1] Includes battle cruisers.

Appendix

TABLE IX—*Concluded*

BATTLESHIPS, ARMORED CRUISERS, AND CRUISERS (SCOUTS) OF THE SIX PRINCIPAL NAVAL POWERS, LAUNCHED 1906-1913

Year	Battleships	Tonnage	Armored cruisers [1]	Tonnage	Cruisers	Tonnage	Total	Total tonnage
JAPAN								
1906	1	19,350	1	13,750	..	.....	2	33,100
1907	1	19,800	2	29,200	2	5,380	5	54,380
1908	..	.....	..	.....	1	1,350	1	1,350
1909	..	.....	..	.....	..	.....	..	.....
1910	1	20,800	..	.....	..	.....	1	20,800
1911	1	20,800	..	.....	3	15,000	4	35,800
1912	..	.....	2	55,000	..	.....	2	55,000
1913	..	.....	2	55,000	..	.....	2	55,000
Total	4	80,750	7	152,950	6	21,730	17	255,430
FRANCE								
1906	..	.....	1	13,428	..	.....	1	13,428
1907	1	14,636	1	13,779	..	.....	2	28,415
1908	..	.....	1	13,779	..	.....	1	13,779
1909	5	90,145	..	.....	..	.....	5	90,145
1910	1	18,029	..	.....	..	.....	1	18,029
1911	2	46,184	..	.....	..	.....	2	46,184
1912	2	46,184	..	.....	..	.....	2	46,184
1913	3	69,516	..	.....	..	.....	3	69,516
Total	14	284,694	3	40,986	..	.....	17	325,680
RUSSIA								
1906	3	42,000	3	31,000	..	.....	6	73,000
1907	1	16,600	1	8,000	..	.....	2	24,600
1908	..	.....	..	.....	..	.....	..	.....
1909	..	.....	..	.....	..	.....	..	.....
1910	..	.....	..	.....	..	.....	..	.....
1911	4	92,000	..	.....	..	.....	4	92,000
1912	..	.....	..	.....	..	.....	..	.....
1913	1	22,435	..	.....	..	.....	1	22,435
Total	9	173,035	4	39,000	..	.....	13	212,035

[1] Includes battle cruisers.

TABLE X

PRINCIPAL CHARACTERISTICS OF BATTLESHIPS RECENTLY COMPLETED OR APPROACHING COMPLETION

Battleship	Designed speed	Displacement	Length between perpendiculars	Beam	Draft	Complement	Battery	Torpedo tubes	Maximum thickness armor belt	Date launched	Date of completion
			Feet	Feet	Feet				Inches		
King George V (Great Britain)	21	24,000	555	89	27.5	900	8 15″ 24 4″	5	12	Oct., 1911	Nov., 1912
Kaiser (Germany)	21	24,110	535	95	27	1,073	10 12″ 14 5.9″	6	12	Mar., 1911	Aug., 1912
Arkansas (United States)	20.5	26,000	554	93	28.5	1,040	12 12″ 21 5″	2	.....	Jan., 1911	Sept., 1912
New York (United States)	21	27,000	565	95	28.5	1,070	10 14″ 21 5″	4	.....	Oct., 1912	Apr., 1914
Paris (France)	20	23,092	541	88.5	29	915	12 12″ 22 5.5″	4	10.5	Sept., 1912	July, 1914
Kawachi (Japan)	20.5	20,800	500	84	27.5	1,000	12 12″ 10 6″	5	9	Oct., 1910	May, 1912
Dante Alighieri (Italy)	23	18,600	520	87	27.5	1,030	12 12″ 20 4.7″	3	9	Aug., 1910	Dec., 1912
Conte di Cavour (Italy)	22	22,340	554	92	27.5	980	13 12″ 20 4.7″	3	12	Aug., 1911	.....

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Sebastopol (Russia)..	23	23,000	590	85	27.5	(?)	12 12″ 20 4.7″	4	9	June, 1911	.....
Viribus Unitis (Austria).....	21	20,010	492	89	26	1,000	12 12″ 12 5.9″	4	11	June, 1911	Sept., 1912
Moreno (Argentina)..	22.5	28,000	575	95.5	28	1,050	12 12″ 12 6″	2	12	Sept., 1911	Apr., 1915
Nevada (United States).....	20.5	27,500	575	95	28.5	912	10 14″ 21 5″	4	.....	July, 1914	Oct. 1915 (trials)
Arizona (United States).....	21	31,400	600	97	29	915	12 14″ 22 5″	4	.....	July, 1915	.....
Queen Elizabeth (Great Britain)....	25	28,000	600	94	27.5	750	8 15″ 16 6″	5	13.5	Oct., 1913	.....
Royal Sovereign (Great Britain)....	21	25,750	580	92	(?)	(?)	10 15″ 12 6″	(?)	13.5	.....	.....
Lyon (France).....	23	29,030	623	95	(?)	(?)	16 13.4″ 28 5.5″	(?)	13.8	.....	.....
Fuso (Japan).....	22	30,600	673	(?)	(?)	(?)	12 14″ 16 6″	(?)	12	Mar., 1914	.....
Normandie (France).	21.5	24,828	574	88.5	29	1,085	12 13.4″ 24 5.5″	6	12.6	.....	.....
Ersatz Wörth (Germany).....	.....	28,500	626	100	32.8	.....	8 15″ 16 5.9″	(?)	15	.....	.....
Kronprinz (Germany)	22(?)	26,000	573	97	27.5	1,150	10 12″ 14 5.9″	5	13.8	Feb., 1914	.....

TABLE XI

PRINCIPAL CHARACTERISTICS OF BATTLE CRUISERS AND ARMORED CRUISERS RECENTLY COMPLETED OR APPROACHING COMPLETION

Cruiser	Designed speed	Displacement	Length between perpendiculars	Beam	Draft	Complement	Battery	Torpedo tubes	Maximum thickness armor belt	Date launched	Date of completion
			Feet	Feet	Feet				Inches		
Princess Royal (Great Britain)	29	26,350	660	88.5	27.5	950	8 13.5″ 16 4″	2	9	Apr., 1911	Oct., 1912
Kongo (Japan)	27	27,500	680	92	27.5	(?)	8 14″ 16 6″	8	11	May, 1912	Aug., 1913
Tiger (Great Britain)	30	28,500	720	90	30(?)	(?)	8 13.5″ 12 6″	2	9	Dec., 1913	.....
Moltke (Germany)	26	22,637	610	96½	27	1,012	10 11″ 12 6″	4	10	Apr., 1910	Sept., 1911
Kurama (Japan)	22	14,600	450	75½	26	850	4 12″ 8 8″	3	7	Oct., 1907	Feb., 1911

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TABLE XII

Time Required to Build Some Recent Battleships of the Five Principal Naval Powers

Names	Tonnage	Date of contract or order	Keel laid	Launched	Commissioned	Elapsed time	
						Yr.	Mo.
GREAT BRITAIN							
Bellerophon	18,600	Sept., 1906 [1]	Dec., 1906	July, 1907	Feb., 1909	2	5
Superb	18,600	Dec., 1906	Feb., 1907	Nov., 1907	May, 1909	2	5
Collingwood	19,250	Oct., 1907 [1]	Feb., 1908	Nov., 1908	Apr., 1910	2	6
Vanguard	19,250	Mar., 1908	Apr., 1908	Feb., 1909	Mar., 1910	2	0
Neptune	19,900	Nov., 1908 [1]	Jan., 1909	Sept., 1909	Jan., 1911	2	2
Monarch	22,500	Dec., 1909	Apr., 1910	Mar., 1911	Apr., 1912	2	4
Thunderer	22,500	Dec., 1909	Apr., 1910	Feb., 1911	June, 1912	2	6
King George V	24,000	Nov., 1910	Jan., 1911	Oct., 1911	Nov., 1912	2	..
Marlborough	25,000	——, 1911 [1]	Jan., 1912	Oct., 1912	June 1914	2	6
GERMANY							
Nassau	18,602	May, 1906 [1]	Aug., 1907	Mar., 1908	Oct., 1909	3	6
Westfalen	18,602	Oct., 1906	Aug., 1907	July, 1908	Nov., 1909	3	..
Posen	18,602	Apr., 1907	July, 1907	Dec., 1908	May, 1910	3	1
Rheinland	18,602	Apr., 1907	July, 1907	Sept., 1908	Apr., 1910	3	..
Helgoland	22,440	July, 1908	Dec., 1908	Sept., 1909	Aug., 1911	3	1
Kaiser	24,110	Sept., 1909 [1]	Dec., 1909	Mar., 1911	Aug., 1912	2	11
Prinzregent Luitpold	24,406	Apr., 1910	Jan., 1911	Feb., 1912	Aug., 1913	3	4

TABLE XII—*Concluded*

Names	Tonnage	Date of contract or order	Keel laid	Launched	Commissioned	Elapsed time Yr.	Mo.
UNITED STATES							
South Carolina	16,000	July, 1906	Dec., 1906	July, 1908	Mar., 1910	3	9
Michigan	16,000	July, 1906	Dec., 1906	May, 1908	Jan., 1910	3	6
Delaware	20,000	Aug., 1907	Nov., 1907	Feb., 1909	Apr., 1910	2	8
North Dakota	20,000	Aug., 1907	Dec., 1907	Nov., 1908	Apr., 1910	2	8
Utah	21,825	Nov., 1908	Feb., 1909	Dec., 1909	Aug., 1911	2	9
Wyoming	26,000	Oct., 1909	Feb., 1910	May, 1911	Sept., 1912	2	11
Texas	27,000	Dec., 1910	Apr., 1911	May, 1912	Mar., 1914	3	3
FRANCE							
Vérité	14,636	May, 1902	——, 1903	May, 1907	Jan., 1908	5	8
Voltaire	18,029	Dec., 1906	June, 1907	Jan., 1909	Aug., 1911	5	8
Danton	18,029	May, 1906 [1]	Jan., 1908	July, 1909	Feb., 1911	4	9
Jean Bart	23,092	Aug., 1910	Nov., 1910	Sept., 1911	June, 1913	2	10
JAPAN							
Satsuma	19,350	——, 1904 [1]	May, 1905	Nov., 1906	Apr., 1910	4	11
Aki	19,800	——, 1905 [1]	Mar., 1906	Apr., 1907	Apr., 1911	4	11
Kawachi	20,800	——, 1908 [1]	Apr., 1909	Oct., 1910	Apr., 1912	3	0

[1] Built in Government dockyards.

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TABLE XIII

BATTLESHIPS AND BATTLE CRUISERS[1] AUTHORIZED, 1907–1914

Nation	1907		1908		1909		1910		1911	
	B. S.	B. C.	B. S.	B. C.	B. S.	B. C.	B. S.	B. C.	B. S.	B. C.
Great Britain	3	..	1	1	6	[2]4	4	1	4	1
Germany	2	1	3	1	3	1	3	1	3	1
United States	1	..	2	..	2	..	2	..	2	..
Japan	2	2	..	..	..	..	..	1	1	3
France	..	..	..	..	..	..	2	..	2	..

Nation	1912		1913		1914		[4] 1915	
	B. S.	B. C.	B. S.	B. C.	B. S.	B. C.	B. S.	B. C.
Great Britain	4	..	[2]6	..	4	..	..	..
Germany	1	1	2	1	1	1	..	..
United States	1	..	1	..	3	..	2	..
Japan	..	..	3	..	..	..	..	..
France	[3]3	..	4	..	1	..	..	..

[1] Armored cruisers able to take position in line of battle.
[2] Includes two authorized by colonies.
[3] Includes one to replace the Liberté.
[4] U. S. only; other nations not considered.

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TABLE XIV

TOTAL NAVAL EXPENDITURES BY PRINCIPAL NAVAL POWERS

Fiscal Year	Great Britain Apr. 1–Mar. 31 [1]	United States, July 1–June 30	Germany April to March	France January to December
1900–1901..	$145,792,850	$61,721,695	$37,173,074	$72,683,180
1901–2.....	150,569,190	68,438,301	46,315,800	67,079,011
1902–3.....	150,679,328	82,977,641	48,818,700	59,217,558
1903–4.....	173,548,058	104,126,192	50,544,000	59,740,222
1904–5.....	179,138,049	116,655,826	49,110,300	60,178,623
1905–6.....	161,117,947	109,725,059	54,918,000	61,565,779
1906–7.....	152,954,342	98,392,144	58,344,300	59,514,296
1907–8.....	151,880,617	117,353,474	69,133,500	[2] 60,685,813
1908–9.....	156,401,161	120,421,579	[2] 80,737,626	[2] 62,194,916
1909–10....	181,936,341	122,247,365	[2] 95,047,820	[2] 64,899,489
1910–11....	202,056,258	111,791,980	[2] 103,302,773	74,102,439
1911–12....	211,596,296	133,559,071	[2] 107,178,480	[2] 80,371,109
1912–13....	224,443,296	129,787,233	[2] 109,989,096	[2] 81,692,832
1913–14....	[2] 237,530,459	136,858,301	[2] 112,091,125	[2] 90,164,625
1914–15....	[2] 260,714,275	[2] [4]141,872,786	[2] 113,993,329	[2] 123,828,872

[1] Does not include amounts expended under Naval Works Acts during the years 1896-1909, amounting to about $155,000,000.
[2] Appropriation.
[3] Estimated.
[4] Includes $4,635,000 this year's allotment of proceeds from sale of the Idaho and Mississippi.

Appendix

TABLE XIV—*Concluded*

TOTAL NAVAL EXPENDITURES BY PRINCIPAL NAVAL POWERS

Fiscal year	Russia January to December	Italy July 1 to June 30	Japan April to March	Total
1900–1901..	$42,101,212	$23,829,206	[1]	.....
1901–2.....	45,488,462	23,875,532	$21,373,954	$423,140,250
1902–3.....	50,769,465	23,522,400	17,654,528	433,639,620
1903–4.....	60,018,895	23,522,400	17,553,279	489,053,046
1904–5.....	58,076,543	24,300,000	10,018,024	497,477,365
1905–6.....	60,228,444	24,494,400	11,378,202	483,427,831
1906–7.....	60,703,557	25,865,668	30,072,061	485,846,368
1907–8.....	43,012,166	27,516,454	35,124,346	504,706,370
1908–9.....	49,682,482	30,453,697	39,347,332	539,238,793
1909–10....	58,059,040	[2] 31,812,885	[2] 35,005,719	589,008,759
1910–11....	[2] 46,520,465	[2] [3]40,595,204	[2] 36,889,158	615,258,277
1911–12....	[2] 56,680,915	[2] [4]40,780,987	[2] 42,944,329	673,111,187
1912–13....	[2] 82,019,633	[2] 41,893,420	[5] [6]46,510,216	716,335,726
1913–14....	[2] 117,508,657	[2] 49,550,147	[5] 48,105,152	791,808,466
1914–15....	[5] 128,954,733	[5] [7]56,920,440	[5] [8]69,111,653	895,396,088

[1] Not available.
[2] Appropriation.
[3] Includes $4,827,568 made available in 1910.
[4] Includes $3,309,220 made available in 1911.
[5] Estimated.
[6] Revised estimates.
[7] Includes two additional appropriations amounting to $9,950,901 because of present European War.
[8] Includes $18,962,844, estimated for naval expenditures up to Dec. 31, 1914, for war with Germany.

NOTE.—War appropriations for Great Britain, France and Russia not included in this table.

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TABLE XV

COST OF SOME OF THE CAPITAL SHIPS RECENTLY COMPLETED

Name	Type	Nation	Displacement	Year completed	Total cost
Superb	B. S.	England	18,600	1909	$8,158,828
Neptune	B. S.	do.	19,900	1911	8,411,497
Hercules	B. S.	do.	20,000	1911	8,087,690
Orion	B. S.	do.	22,500	1912	9,337,709
Monarch	B. S.	do.	22,500	1912	9,182,657
Lion	B. C.	do.	26,350	1912	10,065,562
Nassau	B. S.	Germany	18,602	1909	[1] 8,748,880
Helgoland	B. S.	do.	22,440	1911	[1] 11,209,800
Von der Tann	B. C.	do.	19,000	1910	[1] 8,726,508
Moltke	B. C.	do.	22,637	1911	[1] 10,491,040
Satsuma	B. S.	Japan	19,350	1910	[2] 9,262,800
Aki	B. S.	do.	19,800	1911	[2] 8,764,800
Danton	B. S.	France	18,030	1911	9,641,707
Voltaire	B. S.	do.	18,030	1911	10,520,000
Minas Geraes	B. S.	Brazil	19,250	1910	8,863,843
Michigan	B. S.	United States	16,000	1910	6,805,924
South Carolina	B. S.	do.	16,000	1910	6,683,485
Delaware	B. S.	do.	20,000	1910	8,034,994
North Dakota	B. S.	do.	20,000	1910	8,472,150

[1] Amount appropriated. [2] Approximately.

NAVAL AERONAUTICAL STRENGTH BEFORE THE WAR

[These data are compiled from the Naval Annual (British) 1914; All the World's Aircraft (British) 1914; Taschenbuch der Luftflotten (German) 1914 and 1915.]

Germany: About 5 dirigibles; about 46 seaplanes.

Austria: Number of naval dirigibles not known (March, 1913); a few seaplanes.

Italy: 2-5 dirigibles; about 7 seaplanes (March, 1913).

Appendix

England: About 15 dirigibles; number of seaplanes not stated.

France: Number of naval dirigibles not stated; about 20 seaplanes (March, 1913).

Japan: No naval dirigibles; 10 seaplanes (March, 1914).

Russia: Number of naval dirigibles not stated; 12 seaplanes and a number on order (March, 1915).

United States: No naval dirigibles; 12 seaplanes in serviceable condition; 3 seaplanes on order (July 1, 1914).

Note.—The strength given above is estimated for the beginning of the war except where a date is especially added to the figures. It is impossible to make a reliable estimate of the aeronautic strength of any power since the war began. The figures given for the United States are *exact* (not estimates).

Reference Books

Which Probably May Be Found in a Public Library

Navy Yearbook: Giving annual appropriations and various acts relating to the Navy, beginning 1883; alphabetical list of all United States vessels, with data on same; list of vessels of the principal navies of the world, etc. Printed as a Congressional document.

Fighting Ships (Jane): Giving a detail description of all fighting ships and showing silhouettes, plans, and elevations of ships, description of uniforms, lists of naval bases, etc.

The Naval Pocketbook (Clowes): Giving detail description of individual ships, lists, and numbers, data concerning guns, etc.

The Naval Annual (edited by Viscount Hythe): Giving a series of essays on the navies of the world, lists, and numbers, and plan and elevation of principal ships.

All the World's Aircraft (Jane): Giving details of aeronautical strength of all the powers.

Taschenbuch der Luftflotten (Rasch & Hormel): Same data as above for aeronautics.

Appendix

Volamekum-Handbuch für Luftfahrer (Boykow): Same data as above for aeronautics.

For recommendations to Congress and reports of the various bureaus, see annual reports of the Secretary of the Navy.

The tables of "Warship tonnage" and "Sea strength" (Tables I to V, *ante*) of the principal naval powers are published annually by the Office of Naval Intelligence.

Appendix III

To Increase Our Military Establishment

See Volume V, p. 353, for revised text of bill as passed by Congress and approved by the President, May 18, 1917.

Secretary Baker submitted to Senator Chamberlain of the Senate Committee on Military Affairs and Representative Dent of the House Committee on Military Affairs on April 5, 1917, the following bill, which embraces the War Department's recommendation for temporarily increasing the military establishment of the United States for use in the existing emergency. Summarized briefly, the bill provides for the increase of the regular army and the National Guard troops to the full war strength established by the National Defense Act, and provides for two additional forces of 500,000 men each to be chosen by "selective drafting." Expressed in figures, this would give:

Regular army, including five increments of increase provided for by the National Defense Act of June 3, 1916, when raised to full war strength, 287,846 men.

National Guard, when raised to full war strength, 440,000 men.

Additional force of men to be chosen by selective drafting, 500,000.

Second additional force of men to be chosen by selective drafting, 500,000.

Total, 1,726,846.

The regular army and guard increases are to be made on the existing plan of voluntary enlistment. The selective draft will take in men between the ages of nineteen and twenty-five, on a proportion of about 1,100 to each Congressional district.

The text of the bill is as follows:

To authorize the President to increase temporarily the military establishment of the United States.

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, That, in view of the existing emergency which demands the raising of troops in addition to those now available, the President be, and he is hereby, authorized—

First. Immediately to raise, organize, officer and equip all or such number of increments of the regular army provided by the National Defense Act approved June 3, 1916, or such parts thereof as he may deem necessary; to raise all organizations of the regular army including those added by such increments to the maximum enlisted strength authorized by law. Vacancies in the regular army created or caused by the addition of increments as herein authorized which cannot be filled by promotion may be filled by temporary appointment for the period of the emergency or until replaced by provisional appointments made under the provisions of Sec. 23 of the National Defense Act, and hereafter provisional appointments under said section may be terminated whenever it is determined, in the manner prescribed by the President, that the officer has not the suitability and fitness requisite for permanent appointment.

Second. To draft into the military service of the United States, organize and officer, in accordance

with the provisions of Sec. 111 of said National Defense Act, so far as the provisions of said section may be applicable and not inconsistent with the terms of this act, any or all members of the National Guard and of the National Guard Reserve, and said members so drafted into the military service of the United States shall serve therein for the period of the existing emergency unless sooner discharged.

Third. To raise by draft as herein provided, organize and equip an additional force of 500,000 enlisted men, or such part or parts thereof as he may at any time deem necessary, and to provide the necessary officers, line and staff, for said force and for organizations of the other forces hereby authorized, or by combining organizations of said other forces, by ordering members of the Officers' Reserve Corps to temporary duty in accordance with the provisions of Sec. 38 of the National Defense Act, approved June 3, 1916; by appointment from the regular army, the Officers' Reserve Corps, from those duly qualified and registered pursuant to Sec. 23 of the act of Congress approved January 21, 1903 (35 Statutes at Large 775), from the members of the National Guard drafted into the service of the United States, from those who have been graduated from educational institutions at which military instruction is compulsory, or from those who have had honorable service in the regular army, the National Guard, or in the volunteer forces, or from the country at large; by assigning retired officers of the regular army to active duty with such force with their rank on the retired list and the full pay and allowances of their grade; or by the appointment of retired officers and enlisted men, active or retired, of the regular army as commissioned officers in such forces: *Provided*, That the organization of said force shall be the same as that of the corresponding organizations of the regular army: *And provided further*, That officers with rank not above that of colonel shall be appointed by the President alone, and officers above that grade

by the President by and with the advice and consent of the Senate.

Fourth. The President is further authorized, in his discretion and at such time as he may determine, to raise and begin the training of an additional force of 500,000 men organized, officered, and equipped, as provided for the force first contained in the preceding paragraph of this section.

Fifth. To raise by draft, organize, equip, and officer, as provided in the third paragraph of this section, in addition to and for each of the above forces, such recruit-training units as he may deem necessary for the maintenance of such forces at the maximum strength.

Sixth. To raise, organize, officer, and maintain during the emergency such number of ammunition batteries and battalions, depot batteries and battalions, and such artillery parks, with such numbers and grades of personnel as he may deem necessary. Such organizations shall be officered in the manner provided in the third paragraph of this section, and enlisted men may be assigned to said organizations from any of the forces herein provided for or raised by selective draft as by this act provided.

Sec. 2. The enlisted men required to raise and maintain the organizations of the regular army and to complete and maintain the organizations embodying the members of the National Guard drafted into the service of the United States, at the maximum legal strength as by this act provided, shall be raised by voluntary enlistment or, if and whenever the President desires that they cannot effectively be so raised or maintained, then by selective draft; and all other forces hereby authorized shall be raised and maintained by selective draft exclusively. Such draft shall be based upon liability to military service of all male citizens, or male persons who have declared their intention to become citizens, between the ages of 19 and 25 years, and shall take place and be maintained under such regulations as the President may prescribe not inconsistent with the terms of this act. Quotas for the

several States, Territories, and the District of Columbia, or subdivisions thereof, shall be determined in proportion to the population thereof, and credit shall be given to any State, Territory, District or subdivision thereof, for the number of men who have entered the military service of the United States under the provisions of this act from any such State, Territory, District or subdivision as members of any Federal force hereby authorized. All persons drafted into the service of the United States and all officers accepting commissions in the forces herein provided for shall from the date of said draft or acceptance be subject to the laws and regulations governing the regular army, except as to promotions, so far as such laws and regulations are applicable to persons whose permanent retention in the military service on the active or retired list is not contemplated by existing law, and those drafted shall be required to serve for the period of the existing emergency unless sooner discharged.

Sec. 3. The Vice President of the United States, the officers, legislative, executive and judicial, of the United States and of the several States and Territories, and all persons in the military and naval service of the United States, shall be exempt from the selective draft herein prescribed; and nothing in this act contained shall be construed to require or compel any person to serve in any of the forces herein provided for who is found to be a member of any well-recognized religious sect or organization at present organized and existing whose creed forbids its members to participate in war in any form, and whose religious convictions are against war or participation therein in accordance with the creed of said religious organization; and the President is hereby authorized to exclude or discharge from said selective draft and from the draft under the second paragraph of Sec. 1 hereof, or to draft for partial military service only, persons of the following classes: Customhouse clerks; persons employed by the United States in the transmission of the mails; artificers and workmen employed in the armories,

arsenals and navy yards of the United States, and such other persons employed in the service of the United States as the President may designate; pilots; mariners actually employed in the sea service of any citizen or merchant within the United States; persons engaged in industries found to be necessary to the maintenance of the military establishment or the effective operation of the military forces or the maintenance of national interest during the emergency; those in a status with respect to persons dependent upon them for support which renders their exclusion or discharge advisable; and those found to be physically and morally deficient. No exemption or exclusion shall continue when a cause therefor no longer exists.

Sec. 4. All persons liable to military service under the provisions of this act shall be subject to registration in accordance with regulations to be prescribed by the President; and upon proclamation by the President or other public notice given by him or by his direction stating the time and place of such registration it shall be the duty of every such person liable to military service under the provisions hereof to present himself for and submit to registration under the provisions of this act; and every such person liable to military service shall be deemed to have notice of the requirements of this act upon the publication of said proclamation or other notice as aforesaid given by the President by his direction; and any person who shall fail or neglect to present himself for registration or to submit thereto as herein provided, shall be guilty of a misdemeanor and shall, upon conviction in the proper district court of the United States, be punished by imprisonment for not less than three months nor more than one year, and shall thereupon be duly registered.

Sec. 5. The President is hereby authorized to utilize the service of any or all departments and any or all officers or agents of the United States, and of the several States, Territories, and the District of Columbia, in the execution of this act, and all officers

and agents of the United States and of the several States, Territories, and the District of Columbia, are hereby required to perform such duty in the execution of this act as the President shall order or direct, and the officers and agents of the several States shall hereby have full authority for all acts done by them in the execution of this act by the direction or request of the President. Any person charged as herein provided with the duty of carrying into effect any of the provisions of this act or the regulations made or directions given hereunder, who shall fail or neglect to perform such duty; and any person charged with such duty or having and exercising any authority under said act, regulations, or directions, who shall knowingly make or be a party to the making of any false or incorrect registration, physical examination, exemption, enlistment, enrollment, or muster, or any false or incorrect report or return pertaining to any registration, physical examination, exemption, enlistment, enrolment, or muster; and any person who shall make or be a party to the making of any false statement or certificate as to the fitness or liability of himself or any other person for service under the provisions of this act, or regulations made by the President thereunder, or otherwise evades or aids another to evade the requirements of this act or of such regulations shall, if not subject to military law, be guilty of a misdemeanor and, upon conviction in the proper district court of the United States, be punished by imprisonment for not less than six months nor more than one year, or, if subject to military law, shall be tried by court-martial and suffer such punishment as a court-martial may direct.

Sec. 6. That the qualifications and conditions for voluntary enlistment as herein provided shall be the same as those prescribed by existing law for enlistment in the regular army, except that recruits must be between the ages of eighteen and forty years at the time of their enlistment; and such enlistments shall be for

the period of the emergency unless sooner discharged. All enlistments, including those in the regular army reserve, which are in force on the date of the approval of this act and which would terminate during the emergency, shall continue in force during the emergency, unless sooner discharged, but nothing herein contained shall be construed to shorten the period of any existing enlistment.

All voluntary enlistments shall be in the army of the United States, and those enlisted may be assigned upon enlistment to any force of said army not required to be raised exclusively by selective draft.

The President may provide for the discharge of any or all enlisted men whose status with respect to dependents renders such discharge advisable; and he may also authorize the employment on any active duty of retired enlisted men of the regular army, either with their rank on the retired list or on higher enlisted grades, and such retired enlisted men shall receive the full pay and allowances of the grades in which they are actively employed.

Sec. 7. The President is authorized to appoint for the period of the existing emergency such general officers of appropriate grades as may be necessary for duty with brigades, divisions and higher units in which the forces provided for herein may be organized by the President, and general officers of appropriate grade for the several coast-artillery districts. In so far as such appointments may be made from any of the forces herein provided for, the appointees may be selected irrespective of the grades held by them in such forces. Vacancies in all grades in the regular army resulting from the appointment of officers thereof to higher grades in the forces other than the regular army herein provided for, shall be filled by temporary promotions and appointment in the manner prescribed for filling temporary vacancies by Sec. 114 of the National Defense Act, approved June 3, 1916; and officers appointed under the provisions of this act to higher

grades in the forces other than the regular army herein provided for shall not vacate their permanent commissions nor be prejudiced in their relative or lineal standing in the regular army.

Each chief of bureau of the War Department shall, during the existing emergency, have the rank, pay and allowances of major general.

Sec. 8. The appointments authorized and made as provided by the second, third, fourth, fifth and sixth paragraphs of Sec. 1 and by Sec. 7 of this act, and the temporary appointments in the regular army authorized by the first paragraph of Sec. 1 of this act, shall be for the period of the emergency, unless sooner terminated by discharge or otherwise. The President is hereby authorized to discharge any officer from the office held by him under such appointment, for any cause which, in the judgment of the President, would promote the public service; and the general commanding any division and higher tactical organization or territorial department is authorized to appoint from time to time military boards of not less than three nor more than five officers of the forces herein provided for, to examine into and report upon the capacity, qualifications, conduct and efficiency of any commissioned officer within his command other than officers of the regular army holding permanent or provisional commissions therein. Each member of such board shall be superior in rank to the officer whose qualifications are to be inquired into, and if the report of such board be adverse to the continuance of any such officer, and be approved by the President, such officer shall be discharged from the service at the discretion of the President with one month's pay and allowances.

Sec. 9. That all officers and enlisted men of the forces herein provided for other than the regular army shall be in all respects on the same footing as to pay, allowances and pensions as officers and enlisted men of corresponding grades and length of service in the regular army.

Sec. 10. There is hereby appropriated for the national defense and for each and every purpose connected therewith, to be expended at the discretion of the Secretary of War and to remain available until June 30, 1918, ——— million dollars.

Sec. 11. All existing restrictions upon the detail, detachment and employment of officers and enlisted men of the regular army are hereby suspended for the period of the present emergency.

Sec. 12. All laws and parts of laws in conflict with the provisions of this act are hereby repealed.

Appendix IV

Bulletin, April 20, 1917.

Officers' Training Camps—Eastern Department, U. S. Army

I. *General Plan:* In order to provide officers for the forces to be authorized by Congress for service during the war the War Department has announced the following plan:

Fourteen officers' training camps will be established throughout the United States in territorial districts, such camps to train candidates for commissions as officers to serve with the troops to be raised subsequently in similar territorial districts. The course of training will be for three months beginning May 8th. Men will be obligated to accept such appointments in the Officers' Reserve Corps as may be tendered them by the Secretary of War.

From the men trained about 10,000 will be selected to officer the first increment of 500,000 troops which Congress is expected to authorize. Men trained but not chosen for this service will, if found fit, be commissioned in the Officers' Reserve Corps for service with later increments of troops.

Appendix

This plan will be carried out under the provisions of Section 54 of the National Defense Act (approved June 3, 1916). The plan is a modification, suited to war conditions, of the Federal Military Training Camps for civilians as heretofore maintained, including the intensive methods of field training therein employed. The plan also includes further training for members of the Officers' Reserve Corps, and those who have been recommended for commissions in said Corps or have heretofore applied for such commissions.

II. *Date of Camps:* May 8, 1917.

III. *Location of Camps in Eastern Department:* For the purposes of these camps Kentucky is attached to the Central Department and Mississippi to the Southern Department, and are therefore not included in the following list:

Plattsburg Barracks (N.Y.), for New York City and Long Island and for Maine, New Hampshire, Vermont, Massachusetts, Connecticut, and Rhode Island.

Madison Barracks (N.Y.), for remainder of New York State and northern Pennsylvania (i. e., 10th, 11th, 14th, 15th, 16th, 25th, and 28th Penn. Congressional Districts).

[Note.—Residents of Westchester, Rockland, Dutchess, Putnam and Orange Counties go to Plattsburg.]

Fort Niagara (N. Y.), for southern Pennsylvania, including Philadelphia and Pittsburgh (all Congressional Districts except above).

Fort Myer[1] (Va.), for New Jersey, Delaware, Maryland, and Virginia.

Fort Oglethorpe (Ga.), for North Carolina, South Carolina, and Tennessee.

Fort McPherson (Ga.), for Georgia, Florida, and Alabama.

IV. *Qualifications:* Qualifications will follow in general those prescribed for the Officers' Reserve Corps:

1. Men eligible: The camps will be open to the following classes: (a) Reserve officers of the line (infantry, cavalry, field and coast artillery) and engineers; (b) members of any Reserve Officers' Training Corps unit over 20 years and 9 months and other cadet students of the same age; (c) members of the National Guard when duly authorized; (d) graduates of military schools between 20 years and 9 months and 44 years; and (e) other citizens between 20 years and 9 months and 44 years of age with or without previous military experience provided they are otherwise qualified (see par. 2 below).

2. General qualifications: The qualifications are those stated in Section 57 of the Officers' Reserve Corps regulations: Men are eligible pro-

[1] Subject to change.

vided they are college graduates or undergraduates or clearly well-educated men, and provided they have demonstrated in business, athletics or other activities that they possess to an unusual degree the ability to handle men. All applicants must be citizens of the United States, of good moral character and sound physical condition and capable of undergoing the severe physical work of drill and maneuvers with full infantry equipment.

V. *Age Limits for Grades:* Under present law and regulations no man is eligible for appointment as second lieutenant after he has reached the age of 32 years, as first lieutenant 36, as captain 40, as major 45. It is expected that Congress will shortly be asked to raise these age limits by five years, for men successfully completing the training in these camps.

VI. *Obligation:* Each man attending must enlist for a period of three months and agree to accept such appointment in the Officers' Reserve Corps, U. S. Army, as may be tendered him by the Secretary of War.

VII. *Reserve Officers (Commissioned or Recommended):* At the date of this bulletin, owing to the absence of specific appropriation, there is no authority to order Reserve Officers to active duty, but all such are invited by the War Department to attend these camps for the full

three months for purposes of training, and applicants who have been examined and recommended but not yet commissioned will be admitted to the camps. Reserve officers and such applicants will receive the necessary information from Department Headquarters.

For the present examinations for appointment to the Officers' Reserve Corps in the line (infantry, cavalry, field and coast artillery) and engineers have been suspended.

VIII. *Expenses:* The general plan contemplated for citizens' training camps in regard to furnishing transportation, uniforms and subsistence will be followed:

(a) The government will furnish transportation to the camps.

(b) The government will furnish subsistence during the training period.

(c) All attendants at the camps are urged to furnish their own uniforms in advance, if practicable, as follows:

1 Service hat.
1 Hat cord, U. S. T. C.
1 Service coat, O. D.
2 Flannel shirts, O. D.
2 Service breeches, O. D.
1 Pair canvas leggins.
1 Pair marching shoes.

(d) The government will furnish rifles, ammunition, haversacks, mess and cooking outfits, tentage, cots, bedding, including blankets and such other articles of a general nature, as may be necessary.

IX. *Manner of Application:* The applicant must apply on the official application blank. This form when filled out must be mailed to "Officer in Charge, Officers' Training Camps, 19 West 44th Street, New York City" (*unless otherwise directed for residents of special districts by stamp on margin*). If the applicant's papers are approved he will be notified and directed to report in person to an examining officer near his home.

Officers of the army will be detailed at various points throughout the Eastern Department to examine in person applicants for the camps and inquire into their individual qualifications.

This will include an inquiry into the applicant's physical condition. To facilitate such inquiry and in order that the applicant may ascertain in advance his probable physical fitness, each applicant is strongly urged to undergo a preliminary physical examination by a competent physician or surgeon. A form for this purpose containing full instructions is provided. The physician's report on this form should be

submitted to the examining officer when the applicant presents himself in person.

If accepted by the examining officer the applicant will receive an assignment to a camp and must promptly report in accordance with such assignment.

X. *Course of Instruction:* The course of instruction for the camps is for the training of officers of the line and engineers. During the first month all attendants will undergo a uniform course of instruction in infantry and in those duties of officers which are common to all arms. Thereafter they will be assigned to the various branches of the service for which they seem best qualified, for the purposes of training during the last two months.

XI. *Information:* Address all inquiries for information to and obtain application and physical examination blanks from "Officer in Charge, Officers' Training Camps, 19 West 44th Street, New York City," or local branches of Military Training Camps Association of the U. S.

Appendix V

Military Aviation

The Aviation Section of the Signal Corps was established under the National Defense Act of June 3, 1916. At present the organization is tentative and is as explained in General Order No. 55, War Department, October 16, 1916, given below:

General Orders
No. 55

War Department,
Washington, October 16, 1916.

Tentative System for the General Organization of the Aviation Section, Signal Corps

Aside from the officers and enlisted men of the regular army, the aviation personnel will consist of civilians employed by the Aviation Section of the Signal Corps, reserve officers, enlisted men of the Enlisted Reserve Corps, and National Guard organizations mustered into the service of the United States.

As far as flying is concerned, nearly all the personnel must be trained from uninstructed material. This also applies, to a great extent, to mechanicians and chauffeurs.

In general, the central office will provide for three divisions of duty.

First.—The provision of adequate material, such as aeroplanes and their accessories. This involves the preparation of specifications for the material and its inspection under the inspection department of the central

office. The inspection department in future is intended not only to reach all manufacturing plants and producers of material, but also all materials in the hands of tactical units.

Second.—A system by which the personnel will be trained. This involves a school system for the officers and a training system for the men in both civilian and military institutions.

Third.—The establishment of tactical units, their administration and supply.

The first will be handled by the central office through its technical departments, and issues of supplies ordered when and where necessary.

The second will be decentralized, as far as possible, but will be under the general jurisdiction of the central office in the same manner as other military educational institutions and service schools are under the War Department. There will be two general categories of schools: (*a*) The United States Army Aviation Schools (such as the one now at San Diego, Cal.), whose number, for the time being at least, is intended to be three, that is, one for the Pacific coast, one for the Central States, and one for the East; (*b*) civilian schools maintained by manufacturers or others, which may be utilized for preliminary training purposes.

The country will be divided into three school districts. The commanding officer of the school at San Diego will have general jurisdiction over all the schools in the Western Department; the commanding officer of the school in the central part of the country will have jurisdiction over all the schools in the Central and Southern departments, and the commanding officer of the school in the East will have jurisdiction over all the schools in the Eastern Department.

It is intended to send aviation personnel for all formations, except those of the regular army, to civilian aviation schools to obtain their preliminary instruction,

after which they may finish their course at the army aviation schools and obtain their military aviator's ratings.

The civilian schools will be handled along the following lines:

(*a*) A type of training machine will be prescribed by the government for the use of the schools; (*b*) the schools will be given a certain compensation for the instruction of such personnel as may be assigned to them—this reimbursement will include the average breakage and will be paid when the student satisfactorily completes the course; students before assignment to a civilian school will be subjected to an examination by a board to determine their physical, mental, and moral qualifications to take the course.

Having completed their instruction the students will be available for commissions as reserve officers and assignment to units or other duty.

Military Departments

Each department will have an aviation officer, to be designated as such, on the staff of the department commander.

The aviation officer, under the department commander, will have general supervision over all aviation personnel and stores (with the exception of aviation schools, testing grounds and general supply depots of aviation material) within such departments; the general control of all officers, men and civilian employees of the aviation section within the department; the instruction and equipment of all tactical units of heavier-than-air and lighter-than-air craft; the preparation of requisitions for the proper supply of aero units in his department; the plans for the creation of new areo units within the department, both in the regular army and the reserve of the regular army, and all other matters affecting the aviation section, including lists of the personnel of the Aviation Section,

Signal Officers' Reserve Corps and the Enlisted Reserve Corps, Aviation Section, Signal Corps.

When this system is fully put into effect, the aviation officers of the various departments will remain the same in peace and war and the organization will be capable of rapid expansion to take care of war conditions.

The tactical units (an aero squadron hereafter will have a depot unit of three officers and twenty men) would move off into the field, leaving behind them their respective depots, which depots could be moved wherever necessary, and personnel supplied directly to them from the school and depot systems.

The above indicates merely a general plan to be followed, as it is not deemed expedient to specify minute details to too great an extent at present. To begin with this system will be put into effect by the issuance of orders and directive letters to the various officers concerned. Later when all the points have been tried out, these matters may be incorporated into Army Regulations.

Personnel will be obtained for the Aviation Section, Signal Corps, United States Army, as now prescribed by law and army regulations.

Personnel for the Aviation Section, Signal Officers' Reserve Corps, under section 37, National Defense Act, will be obtained as prescribed in General Orders, No. 32, War Department, July 28, 1916, and as per Appendix A, herewith.

Personnel for the Enlisted Reserve Corps, Aviation Section, Signal Corps under section 55, National Defense Act, will be obtained as prescribed in Appendix B, herewith.

Requirements for civilian aviation schools are contained in Appendix C, herewith.

The method by which officers and men of the National Guard may be detailed for duty at aviation schools under section 99, National Defense Act, is mentioned in Appendix D, herewith.

Appendix

Appendix A

Requirements for service in the Aviation Section, Signal Officers' Reserve Corps

1. Authority has been given by the Secretary of War for the organization of the Aviation Section, Signal Officers' Reserve Corps. The section may consist of 296 officers. The grades in said section shall be in the same proportion as those obtaining in the Aviation Section of the Signal Corps, United States Army, up to include the grade of major. Unless especially authorized by the officer in charge of the aviation section, all successful applicants for commissions in the Aviation Section, Signal Officers' Reserve Corps, will be commissioned in the grade of first lieutenant.

2. Any male citizen of the United States, not under 21 nor over 30 years of age, desiring a commission in the Aviation Section, Signal Officers' Reserve Corps, will submit a letter in the following form to The Adjutant General, United States Army; to the adjutant of the department in which the applicant lives, or to the officer in charge of the Aviation Section, Signal Corps of the Army:

Letter of Application for Examination for Commission in Officers' Reserve Corps

(Under section 37, act of June 3, 1916)

....., ..., 19...

The ....

SIR: I have the honor to apply for examination for a commission as[1]..... of[2]..... [3].....
in the Officers' Reserve Corps, organized under the authority of Congress.

I have served ..... years in [4].....

I have pursued a regular course of instruction for ..... years in [5].....

I graduated in the year ..... from [6].....
after having creditably pursued the course of military instruction therein provided.

I was born ....., ..., and am [7].....
a citizen of the United States. My business is.....
.....My experience is .....
I inclose letters of recommendation and addresses of citizens who know me as follows:.....

Respectfully,

.....
.....

The correctness of the statements above made was sworn to and subscribed before me, ..., 19...

[8].....
.....

[1] Insert grade.
[2] Insert branch of service, staff corps, or department as Cavalry, Field Artillery, Coast Artillery, Infantry, Quartermaster Corps, etc.
[3] Name staff position, and in this case rule out 1 and 2.
[4] Insert service in regular army of the United States, or volunteer forces of the United States, or organized militia of any State, Territory, or District of Columbia; also state in what capacity.
[5] Insert name and location of school or college.
[6] Insert the name and location of the educational institution in which an officer of the army or navy has been detailed as superintendent or professor pursuant to law.
[7] Insert "not" if in accordance with fact.
[8] Oath to be taken before, and signature to be made by, officer authorized by law to administer oaths.

NOTE.—The foregoing is the form to be followed in applying for examination and is to be addressed to the adjutant of the department in which the applicant lives. The Adjutant General of the army, or the head of the staff corps or department concerned.

The communication authorizing the examination of the applicant will be sufficient authority when submitted to the president of the examining board before which the applicant will be ordered to appear. This board will consist of from two to five commissioned officers of the regular army of the United States, or of regular and reserve officers of the Signal Corps, including at least one and not more than two medical

officers, at least one officer of the regular army will serve on each board. This board will be appointed on the recommendation of the officer in charge of the Aviation Section of the Signal Corps of the army.

Each applicant will be subjected to the same physical examination as is required of officers of the regular army applying for aviation duty. Applicants will not be examined mentally, but the equivalent of a college education will be required. The examining board will consider documentary evidence submitted by the applicant. It may seek additional information by practical tests, personal questions, or by procuring additional documentary evidence. Flying ability will be given first consideration, noted and reported in the proceedings of the board. No applicant for a commission as an officer of the Aviation Section, Signal Officers' Reserve Corps, will be considered proficient until he is able to pass the flying test for reserve military aviator, unless specially excepted for reasons stated by the officer in charge of the Aviation Section, Signal Corps of the army.

After the required examination, the proceedings of the board will be forwarded to the headquarters of the convening authority, with the recommendations of the board as to the qualifications of the applicant. The officer in charge of the Aviation Section, Signal Corps of the army, will recommend to The Adjutant General the grade in which each candidate should be commissioned. After appointment by the President, The Adjutant General will issue the commission. The commissions of the officers of the Officers' Reserve Corps will be in force for a period of five years, unless sooner terminated at the discretion of the President. Such officers may be recommissioned either in the same or higher grades for successive periods of five years, subject to such examination as may be prescribed.

In time of actual or threatened hostilities, officers of the Officers' Reserve Corps are subject to such duty as the President may prescribe. The officer in charge of

the aviation section, when authorized by the Secretary of War, may order reserve officers to duty for periods not to exceed 15 days a year, and while so serving such officers will receive the pay and allowances of their respective grades in the regular army.

With the consent of the reserve officers concerned, and within the limit of funds available for the purpose, officers of the Officers' Reserve Corps will be retained on active duty for such periods as the Secretary of War may prescribe.

In order to qualify for examination as officers of the Aviation Section, Signal Officers' Reserve Corps, especially qualified citizens of the United States not under 21 nor over 27 years of age will be assisted by the United States as follows: To become eligible for obtaining such instruction, the person desiring it shall make application to the officer in charge of the Aviation Section, Signal Corps, who, if the applicant is considered desirable, will cause such applicant to be examined by the same board convened for the examination of officers of the Aviation Section, Signal Officers' Reserve Corps, which board will pass on the applicants' physical, mental, and moral qualifications. The physical test shall be the same as that required for officers of the Aviation Section of the Signal Corps. In the mental test the applicant will be required to establish the fact that he has the equivalent of a college education. The moral test will require the applicant to establish his reliability and good habits. The candidate will be required to state in writing that if he successfully passes his aviation tests he will become an officer in the Aviation Section, Signal Officers' Reserve Corps. If the candidate successfully passes, the board will so recommend to the officer in charge of the Aviation Section, Signal Corps. The officer in charge of the Aviation Section, Signal Corps, will then designate the applicant as an aviation student. If the student desires to enlist in the Aviation Section of the Enlisted Reserve Corps, he will be made a noncom-

missioned officer and placed on active duty up to the time his course is finished and he is discharged to accept a commission in the Aviation Section, Signal Officers' Reserve Corps. If he fails in his course, he may apply for his discharge from the Aviation Section of the Enlisted Reserve Corps. If the student does not desire to enlist he may attend the course as a civilian at his own expense. The aviation student will then be assigned by the officer in charge of the Aviation Section to a school for his instruction. Such school may be either a United States aviation school or a civilian aviation school. The civilian aviation school will be one approved by the officer in charge of the Aviation Section, Signal Corps, as to instructors, machines used, and character of instruction given. The civilian schools shall receive $500 for each aviation student who qualifies for the preliminary flying test, the test to be conducted by an officer or agent of the Aviation Section of the Signal Corps. For any aviation student who qualifies as a reserve military aviator upon graduation from a civilian aviation school an additional $300 will be paid to such school. Upon the candidate satisfactorily passing the reserve military aviator's test he will receive a commission as an officer in the Aviation Section, Signal Officers' Reserve Corps, without further examination.

It is the intention gradually to organize reserve aero squadrons in various parts of the country from the commissioned and enlisted reserve personnel.

Appendix B

Requirements for service in the Enlisted Reserve Corps, Aviation Section, Signal Corps

Qualifications

1. *General Requirements.*—Service in the Enlisted Reserve Corps, Aviation Section, Signal Corps, is by enlistment. Applicants must not be under 18 nor over

45 years of age. They must be of good antecedents and habits and free from bodily defects and diseases. They must be citizens of the United States or have made legal declaration of their intention to become citizens of the United States and be able to speak, read, and write the English language. Before enlisting, they are required to pass physical examination to determine their fitness for service in the United States army.

Before authority for enlistment is granted the applicants will furnish two or more certificates of good moral character. As the service is technical, men qualified as aviators, balloonists, or mechanicians, who have had experience in the construction and repair of aeroplanes or internal-combustion engines, are particularly desirable.

2. Following are the numbers authorized in each grade:

(1) 54 master signal electricians.
(2) 190 sergeants, first class.
(3) 271 sergeants.
(4) 543 corporals.
(5) 1,381 privates, first class.
(6) 276 privates.

2,715 total.

3. Qualifications for enlistment direct into each of these grades are as follows:

(1) Candidate must have a working knowledge of gasoline motors, magnetos, carburetors, telegraphy, and a fair knowledge of the principles of electricity and photography.

(2) Working knowledge of motors, magnetos, and carburetors.

(3) and (4) A general knowledge of subjects given under (1) and (2) and have sufficient training and interest to show that he is adaptable to work of this kind.

(5) Applicants must show an interest in the subjects mentioned, be competent, and keen, to insure that he will develop along the proper lines in training.

When men enlist in any of the above grades, certificates of enlistment in the Enlisted Aviation Reserve Corps will be issued by The Adjutant General of the army. The certificates will confer upon the holders, when called into active service or when called for purposes of instruction and training, and during the period of such active service, instruction, or training, all the authority, rights, and privileges of like grades of the regular army. Members of the Enlisted Reserve Corps, Aviation Section, Signal Corps, shall take precedence in each grade of said corps according to dates of their certificates of enlistment therein, and when called into active service, or when called out for purposes of instruction and training, shall take precedence next below all other enlisted men of like grades in the regular army. The President is authorized by law to assign members of the Enlisted Reserve Corps, Aviation Section, Signal Corps, as reserves to particular organizations of the regular army. The Secretary of War is authorized by law to order enlisted men of the Enlisted Reserve Corps, Aviation Section, Signal Corps, to active service for purposes of instruction or training for periods not to exceed 15 days per year, provided that, with the consent of such enlisted men, and within the limits of funds available for such purposes, such periods of active service may be extended for such number of enlisted men as may be deemed necessary. Enlisted men will receive the pay and allowances of their respective grades in the regular army, but only when ordered into active service, including the time required for actual travel from their homes to the places to which ordered and return to their homes.

4. *Rates of Pay.*—The grades and pay of the enlisted force of the Aviation Section, Signal Corps, United States Army, are as follows:

	While serving in the U. S., Hawaii, Porto Rico, or the Canal Zone	While serving in Alaska, China, or the Philippines
	Per month	Per month
Master signal electricians	$75.00	$90.00
Sergeants, first class	45.00	54.00
Sergeants	36.00	43.20
Cooks	30.00	36.00
Corporals	24.00	28.80
Privates, first class	18.00	21.60
Privates	15.00	18.00

In addition to the above there will be a slight increase per month after each enlistment period of four years. All enlisted men, in addition to their regular pay, receive rations, quarters, clothing, fuel, bedding, medicine, and medical attendance when required.

When called into active service of the United States members of the Enlisted Aviation Reserve Corps will receive the rate of pay corresponding to their grade.

5. *Retirement.*—Enlisted men of the Aviation Reserve Corps will not be entitled to retirement or to retired pay, nor will they be entitled to pension except in case of physical disability incurred while on active service or while traveling under orders of competent authority to or from designated places of duty.

6. *Uniform.*—The uniform to be worn by the enlisted men of the Enlisted Reserve Corps, Aviation Service, Signal Corps, except corps insignia, shall be the same as prescribed for enlisted men of the Aviation Section, Signal Corps of the Regular Army Reserve. In time of peace there shall be issued to each enlisted man of the Enlisted Reserve Corps, Aviation Section, Signal Corps, such articles of clothing, and equipment as may be prescribed. All clothing and equipment shall remain the property of the United States.

7. *Term of Enlistment.*—The term of enlistment is four years.

Appendix

Appendix C

Requirements for Civilian Aviation Schools

(An inspection will be made by an officer of the Aviation Section of the Signal Corps to determine whether the requirements are fulfilled.)

1. *Field.*—The field should be of sufficient size and shape to permit of landing and getting away in at least two different directions under normal conditions. The ground must be fairly level and free from obstructions of all kinds. These requisites will be determined on inspection by an officer or agent of the Aviation Section of the Signal Corps.

2. *Training Machines.*—The training machines will comply with the specifications prescribed by the Aviation Section for the preliminary and advanced training types. These specifications will be furnished all civilian schools who instruct students for the government, or desire to do so.

3. *Instructors.*—Instructors must be men of experience in flying and thoroughly competent to teach through the reserve military aviator stage. They should be level-headed, have good judgment, and sufficient mental balance to impart what they know.

4. *Character of Instruction.*—The course of instruction will be divided into two stages. The first stage will include instruction and qualification through and to include the preliminary flying test. This test will be held under the supervision of an officer or agent of the Aviation Section of the Signal Corps. The second stage, which is optional with the school authorities, will consist of advanced training necessary to qualify an aviation student as a reserve military aviator. An advanced training type of machine will be used at least during the last stages of this instruction. Detailed information as to the course to be followed in this stage will be furnished the school authorities. The reserve military aviator test will be held under the

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supervision of an officer or agent of the Aviation Section of the Signal Corps.

5. *Preliminary Firing Test.* — (*a*) Three sets of figure eights around pylons 1,000 feet apart. In making turns around pylons all parts of machine will be kept within a circle whose radius is 800 feet.

(*b*) Stop motor at a minimum height of 300 feet and land, causing machine to come to rest within 150 feet of a previously designated point.

(*c*) An altitude test consisting of rising to a minimum height of 1,000 feet.

(*d*) Glides with motor throttled, changing direction 90 degrees to right and left.

NOTE.—(*a*) and (*b*) may be executed in one flight; (*c*) and (*d*) in one flight. The same rules apply in starting from and landing on water. Special attention will be paid to the character of landings made.

Should any aviation student desire to take the pilot license test prescribed by the Aero Club of America, every facility will be offered for him to do so.

Report of these tests will be submitted to the officer in charge of the Aviation Section, with the information as to whether or not the school will complete training of the aviator through the reserve military aviator stage.

6. *Reserve military aviator test* will be as follows:

(*a*) Climb out of a field 2,000 feet square, and attain 500 feet altitude, keeping all parts of machine inside of square during climb.

(*b*) Glides at normal angle, with motor throttled. Spirals to right and left. Change of direction in gliding.

(*c*) At 1,000 feet, cut off motor and land within 200 feet of a previously designated point.

(*d*) Land over an assumed obstacle 10 feet high and come to rest within 1,500 feet from same.

(*e*) Cross-country triangular flight of 30 miles, passing over two previously designated points. Minimum altitude 2,500 feet.

(*f*) Straight-away cross-country flight of 30 miles. Landing to be made at designated destination. Both outward and return flight at minimum altitude of 2,500 feet.

(*g*) Fly for 45 minutes at an altitude of 4,000 feet.

7. *Pay for Tuition.*—Upon the student passing the preliminary flying test satisfactorily the school will be paid $500. If the student is continued under instruction until he satisfactorily passes the reserve military aviator test, an additional $300 will be paid the school.

8. All candidates for the Aviation Section, Signal Officers' Reserve Corps, will be required to pass the prescribed physical examination, must weigh not more than 190 pounds, stripped, must furnish evidence of having a college education, and be of good moral character.

9. Applicants for commissions as reserve officers who hold the pilot certificate of the Aero Club of America, will, after successfully undergoing the prescribed physical examination, be given a flying examination embodying at least the requirements of the preliminary flying test. If competent, they may also take the reserve military aviator's test.

If the preliminary flying test is passed satisfactorily and a candidate qualifies in other respects, he will be eligible for further instruction to qualify as a reserve military aviator.

If, in addition to the preliminary flying test the candidate also passes the reserve military aviator's test satisfactorily, he will be given a commission in the Aviation Section, Signal Reserve Corps, provided all other qualifications are fulfilled.

Appendix D

Detail of Officers and Enlisted Men of the National Guard at Signal Corps Aviation Schools

Officers and enlisted men of the National Guard may be detailed at Signal Corps aviation schools under

section 99 of the National Defense Act. National Guard officers and men desiring such course will apply to the adjutant general of their State, who will forward the applications direct to the Chief, Militia Bureau, War Department, Washington, D. C. Such officers and enlisted men will be required to pass the prescribed physical and mental examinations which will be similar to those required of reserve officers, Aviation Section, Signal Officers' Reserve Corps. On approval by the Militia Bureau, orders will be requested from The Adjutant General of the Army assigning such officers or enlisted men to duty at aviation schools.

[2446404, A. G. O.]

By order of the Secretary of War:

H. L. SCOTT,
Major General, Chief of Staff.

Official:

H. P. MCCAIN,
The Adjutant General.

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YORKTOWN
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